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Joint Efforts Pay Large Dividends

As we get older (and I do mean “we”), one of the most common complaints seems to be joint pain. I was recently reminded of that fact when I used rather poor form while lifting weights a few weeks ago. The resulting inflammation in my elbow has put a damper on my exercise program for the last several weeks. With additional nutritional support, DMSO, and a more careful routine, my elbow has improved considerably, and I’m almost back to normal. The whole event, however, brought home just how difficult everyday activities can become when you have to deal with joint pain and/or inflammation.

If there were an owner’s manual for your body, I’m sure that “The Care and Maintenance of Joints” would be one of the major sections. Unfortunately, most people don’t know that you can take specific steps to protect your joints from damage and the arthritis that develops as a consequence. We’ve been led to believe that an old injury or just advancing aging will ultimately lead to arthritic joints, and that the only two options available are taking pain medication for life or replacing the joint with an artificial one through surgery. I’m sure it would surprise a lot of people to learn that they have other options that not only help prevent arthritis but, in many cases, actually restore damaged joint surfaces and reduce the pain, inflammation, and decreased range of motion.

Joints are unique structures that receive a considerable amount of “wear and tear” throughout a lifetime. And, in all honesty, if you live long enough, work hard enough, and play hard enough, you will probably have to deal with some degree of joint damage sometime in your life. However, the methods I’ll tell you about here can help prevent joint problems, or at least delay them. I’ll also tell you how to help deal with any existing problems.

Many of the problems with joints stem from the fact that the cartilage surfaces that make up joints have little,

if any, direct blood supply. It helps if you visualize this cartilage as being similar to a sponge. It gets most of its nutrients for repair from the fluid within the joint capsule itself (synovial fluid). As the joint is moved throughout its range of motion, the “sponge” is compressed and released. This compressing action helps “squeeze” out waste material from the living cartilage cells. And, just as a sponge sucks in water, when pressure on the cartilage is released nutrients are then “pulled” into the cartilage cells. Since the survival of every cell of the cartilage surface depends on this regular exchange of waste material and nutrients, moving each joint through its full range of motion daily is one of the first steps for keeping it healthy.

The synovial fluid also provides the lubrication and shock absorption for your joints. It contains a couple of compounds called hyaluronic acid and lubricin.

Support Worth Crowing About

A great deal of research has been done on hyaluronic acid. It is found in several areas of the body, not just in the synovial fluid of joints. I don’t know if you’ve had the opportunity (if you want to call it that), but if you ever dissected a cow’s eyeball in high school biology class you might recall that hyaluronic acid made up much of the runny Jell-O-like fluid inside the eyeball. You may have also heard about using injections of hyaluronic acid to



In This Issue

Joint Efforts Pay Large Dividends	121
News to Use: Barbeque Safety	126
The Test of Time: Benefits of B3	127

You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on. — Benjamin Franklin

temporarily smooth out facial wrinkles. Most of the research on hyaluronic acid, however, involves its use in the treatment of joint problems. It is often injected into knee joints as a temporary treatment for osteoarthritis.

Oral hyaluronic acid supplements are generally made from rooster combs, and a few have been shown to help in the treatment of arthritic joints—though they are quite expensive. These are the same compounds that can be found in bovine (cattle) and *properly processed* shark cartilage, either of which can help with the repair and protection of various joints throughout the body. Other compounds are available to help reduce inflammation and pain. Ultimately, though, the goal should be restoration and healing of the joint itself.

The “poor man’s” joint supplement (and probably one of the most beneficial) is bone broth. Although obesity and a lack of exercise are obviously major contributing factors to the widespread osteoarthritis problems we see today, I feel a large part of the problem is also the fact that bone broths are no longer a part of our diet. I’ve investigated numerous “pure” hyaluronic acid supplements (and will continue to do so), but I have yet to find one that is superior to bone and joint broth.

I’ve written articles in the past describing how preparing broths from the carcasses and joints of cattle, chickens, and fish can have a tremendous beneficial effect on your overall health. Much of the reason stems from the increased intake of hyaluronic acid—along with various minerals, proteins, and other compounds necessary for proper joint health. You can add vegetables or meat back into the broth for hearty soups or stews, and substitute the broth for chicken or beef stock in many recipes. [*Editor’s note: See Vol. 10, No. 23 for more about bone broth.*]

Several years ago, the ABC program *20/20* aired a program segment that featured the residents of Yuzurihara, a small village about two hours out of Tokyo, Japan. It seems that more than 10 percent of the population in this village was 85 years of age or older. Even more astounding was the fact that the elderly residents were very healthy. They rarely saw a doctor, and diseases such as cancer, diabetes, and Alzheimer’s were practically

unknown. Additionally, the people were very physically fit. Many worked in their gardens four or five hours a day without any sign or symptom of joint problems, and their skin seemed to defy aging. They had hardly any wrinkles and there were never any reports of skin cancer.

Their longevity and lack of health problems were attributed to their increased levels of hyaluronic acid. Unlike the other areas in Japan, this region was not suitable for growing rice—so the residents hadn’t made it the staple it is in the rest of Japan. Instead, more root vegetables were grown and eaten. The vegetables (satsumaimo, satoimo, konyaku, and imoji) are not well-known in this country, but they are apparently high in magnesium—which is related to increased levels of hyaluronic acid.

(As a side note, since the *20/20* report first aired, a more Western-style diet has been adopted by the younger people in this area—and they are beginning to see the same health problems experienced here in the US. In fact, many of the elderly on the “old” diet have now outlived their children who chose not to continue eating the traditional foods.)

Another source of hyaluronic acid is eggs. The parts that you eat—the white and the yolk—are well-known sources of high-quality protein. But the membrane that separates the white from the shell is also composed mostly of protein, plus hyaluronic acid, glucosamine, and chondroitin. In fact, preliminary open-label studies suggest that the membrane itself could help alleviate joint pain. (At this point, it seems they’ve figured out how to use every part of the chicken but the cluck.)

When you make your joint-boosting broths, you can throw in any left-over egg shells from breakfast. Just strain them out with the bones after the broth has cooked. If you’re not big on eating eggs (though I highly recommend that you do so), or making soup puts too much heat in your kitchen during the summertime, you can look for supplements with eggshell membrane. The unpublished research I mentioned above showed that a small group of individuals who took supplements containing 500 mg of eggshell membrane had a reduction in



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Dr. Williams works closely with Mountain Home Nutritionals, a division of Doctors' Preferred, LLC and subsidiary of Healthy Directions, LLC, developing his unique formulations that supply many of the hard-to-find nutrients he recommends. Dr. Williams is compensated by Doctors' Preferred, LLC on the sales of these nutritional supplements and health products, which allows him to continue devoting his life to worldwide research and the development of innovative, effective health solutions.

their joint and muscle pain after just seven days, and that relief continued through the end of the study at 30 days.

This is the kind of research I love to read. I'm sure we'll see more studies of this sort, using more patients and for longer periods of time. I don't see any downside to taking egg membrane now rather than wait years for it to get the blessing of some major journal. These supplements aren't widely available yet, though. The only one I've found that contains just the membrane is a product called NEM, from Membrell. The company will provide a discount of \$5 to readers of *Alternatives*, with free shipping if you order using their Web site (an additional savings of \$6). You can contact them at www.Membrell.com or 800-749-1291. Mention code ALT09 when you order.

Moving Beyond the Joints

Increasing your hyaluronic acid levels through broths and/or a comprehensive joint supplement can have broader implications than just improving joint problems. Proper levels of hyaluronic acid are essential for the maintenance and repair of connective tissue throughout the body. If you suffer from any of the problems listed below, increased levels of hyaluronic acid could be a lifesaver. (Also, keep in mind that most of these conditions are associated with lower levels of magnesium—which is a mineral necessary to produce hyaluronic acid.)

- Mitral valve prolapse
- Temporomandibular joint (TMJ) problems
- Detached retinas
- Fibromyalgia
- Glaucoma
- Poor scar formation
- Muscle contractures
- Hernias
- Poor wound healing

Gliding Into Comfort

As I mentioned earlier, the compound lubricin is also found in synovial fluid. You won't find much research on lubricin, but I suspect that will change over the next few years. Lubricin is to joints like oil was to the Tin Man in *The Wizard of Oz*. It provides the "gliding" action where joint surfaces meet. Together, lubricin and hyaluronic acid provide a "cushioning" effect by storing and dissipating the energy created during an impact. There are a couple of important things we now know about lubricin.

First, lubricin is created by the thin layer of tissue that lines the joints. If this liner becomes inflamed, then lubricin production breaks down, and can even stop. For example, the inflammation associated with rheumatoid arthritis destroys lubricin. (Several of the researchers I

spoke with were also of the opinion that various drugs appeared to decrease lubricin levels. They weren't willing to be more specific until further research had been performed. Unfortunately, I doubt we'll see any of that research in the near future.)

Secondly, motion of the joint increases the production of lubricin. That's why activity—specifically, exercise for joint mobility—is so crucial to maintaining joint health.

Appropriate Actions for Mobility

One of the more common areas for joint problems is the shoulder. As one becomes more sedentary (couch potato might be a better term), very often he or she no longer performs motions that require raising the hands and arms above the head. This lack of movement results in areas of the "sponge" that don't get the opportunity to dispose of waste material or receive needed nutrients. In turn, hyaluronic acid and lubricin levels decline. In these areas, the cartilage begins to deteriorate. It can eventually roughen and thin to a point that the person experiences a grinding sensation as well as stiffness and pain.

(Although joint surfaces may not have a blood supply, the joints themselves have a very rich nerve supply. The vast number of nerves allows the body to precisely determine exactly the position of each joint in the body, which is essential for standing, walking, picking up objects, et cetera. Unfortunately, this also makes us acutely aware of any inflammation, swelling, or damage to our joints.)

The first order of business for maintaining healthy joints is to move each one through its complete range of motion (ROM) several times *every day*. The ideal time is in the morning. This will help preserve your joints as well as help get rid of the stiffness most of us experience.

Stiffness is actually a normal phenomenon. At all the nerve endings in joints, muscles, and tendons there are sensors called proprioceptors that constantly provide information about joint angle and muscle length and tension so that your brain knows the body's position. If you stay in one position for an extended length of time (sitting, sleeping, et cetera), your nervous system doesn't get any new information—so it begins to tighten your muscles as a protective measure. Moving your joints through their ROM first thing in the morning wakes up these proprioceptors and resets your nervous system for the day's activities—which is why mobility exercises can have such profound effects on your overall wellness, particularly when it comes to joint health.

With inactivity, not only do the joint surfaces begin to suffer, but the ligaments and connective tissues that support joints will also begin to shorten and adapt to this

inactivity. It used to be common for doctors to prescribe complete immobilization of an area for months after a fracture. After the cast was removed, it often took several months of additional therapy just to be able to straighten the area on the body where the broken bone was located. During the inactivity, the supporting connective tissue shortens to support the new joint's position. The same thing happens when you continually fail to move the joint through the ROM.

Strangely, there hasn't been a lot of published material that focuses on mobility exercises, or ways to take your joints through their full ROM. Volumes have been written on stretching, which actually has to do more with muscle flexibility than it does with joint mobility. With the mobility exercises I'm going to describe, you may not even feel much stretching. Keep in mind that this is perfectly okay. Again, what we want to do is put each joint through its *normal* range of motion. It's not necessary to become a circus contortionist.

(If you have past injuries to a joint, it may require *some gentle stretching* and persuasion to regain your full range of motion. Scar tissue from old injuries or surgery will create adhesions and shrinkage of connective tissue. Some people have used Rolfing or some other form of deep-tissue massage to get rid of adhesions.)

Dr. Amosov's 1,000 Movements

One of the best routines for restoring or maintaining joint mobility was developed by the Russian heart surgeon Dr. Nikolay Amosov. It was first told to me by Pavel Tsatsouline when I took his instructor certification course for Russian Kettlebells.

In the mid-1950s, Dr. Amosov developed the physical training system he called his "1,000 movements." He wanted to combat the spinal degeneration and accompanying radiating nerve problems he was having that were caused by years of doing daily, drawn-out surgical procedures. At the time, his program involved 10 exercises—each of which were repeated 100 times. (The program was later refined to 12 exercises, but the number of repetitions remained at 1000 per day.)

- Squat (As you squat, either bring your arms straight out in front of you or stabilize yourself with a chair to help keep your balance.)—100 repetitions
- Side bends—100 repetitions
- Pushups on the floor—50 repetitions
- Forward bends (Remember to bend your knees each time before returning to the upright position.)—100 repetitions
- Straight arm lateral raises—100 repetitions
- Torso turns—50 repetitions

- Roman chair sit-ups (Since the original publication of these exercises, this has been found to be not one of the best forms of sit-ups. If done incorrectly, it can put your lower back at risk. I would recommend doing crunches on an exercise ball instead. Not only is it a good abdominal exercise, it produces the mobility we're trying to achieve. Exercise balls can be purchased rather inexpensively nowadays—some for as little as \$15. If you can't find one locally, try Fitness Wholesale at 800-537-5512 or online at www.FWOnline.com.)—100 repetitions
- One-legged jumps in place—50 repetitions per leg
- Bringing the elbows back—100 repetitions
- The "birch tree"* (See detailed description below)—hold for the count of 100
- Leg and hip raises. Lie on your back and bring your feet behind your head while keeping your leg reasonably straight—100 repetitions
- Sucking in the stomach—50 repetitions

* The "birch tree" is a Russian name for the yoga *sarvangasana* pose or the shoulder stand. In this exercise, you will point your legs toward the ceiling. Lie on your back with your arms at your sides. Lift your legs and place your hands in the small of your back. Prop your body on your forearms and point your legs and toes straight up. Your weight should be on your shoulders and upper back, rather than your neck. (You may want to use a friend as a spotter the first few times you try this. Women should avoid it altogether during menstruation or pregnancy.)

Obviously, the exercises and repetitions you can perform will depend largely on your current age and ability. If you're not in the best shape, then start with 10 repetitions of each exercise a day and begin to add another 5 to 10 each week until you reach 1,000 total movements.

As you increase the number of repetitions, make sure the movements are done at a fairly steady and rapid pace so that you're getting a little cardiovascular benefit as well. However, don't sacrifice form for speed. Again, the primary purpose is to achieve full range of motion for each joint. You should be able to complete the entire 1,000 movements in about 25 to 45 minutes.

[Editor's note: To get the most benefit out of these exercises, you should do them using proper form. Full descriptions of each exercise can be found in the Subscriber-Only section of Dr. Williams' Web site, www.DrDavidWilliams.com. The information will be posted from October 10 through October 22. Use your registered e-mail address and the password found at the bottom of page 8 for access.]

Please don't let the exercise suggestions I've discussed here become intimidating. I fully realize that for some people even beginning such a program could be difficult at first. If you are in this category, simply make up your

own exercises and progress at your own pace. Any efforts to improve joint mobility will be well worth it.

You might start by doing a series of side-to-side turns followed by forward and backward neck movements while sitting. Then continue progressing to opening and closing the jaw (the jaw is a joint that should be included) and then move on to shoulder rotations where you move each arm in a circle as though your arm was a hand on a large clock. Improvise as you work down each joint of the arm, hand, and fingers. Continue with the back, torso, hips, knees, ankles, feet, and toes. Whatever you do, start moving and keep moving. And even if you're active with other forms of exercise, don't overlook this routine. I usually start my joint mobility exercises each morning in the shower. Remember to move each and every joint through its total range of motion each and every day.

(If you would like more advanced exercise techniques on increasing mobility and flexible strength, I recommend the book *Super Joints* by my friend Pavel Tsatsouline. It's available from Dragon Door Publications at 800-899-5111. The book also includes a very useful guide to assessing your joint mobility.)

I'm fully aware that at this point in life most of us already have "a few miles" on us, so you may already have some damaged or arthritic joints. Thus, in addition to the exercises I've mentioned, there are nutrition suggestions that can help preserve the joint mobility that is still intact while also helping in the restoration of damaged joints.

Rebuilding Your Way to Full Capacity

You've probably heard statements to the effect that every cell in your body is replaced every seven years. Unfortunately, for our joints that's not really the case.

There's currently a great deal of research being undertaken in an effort to determine the exact turnover rate of cells in different tissues. We've long known, for example, that red blood cells live only 120 days and then are replaced with new ones. The cells lining your intestinal tract are replaced every five days, and the epidermal cells protecting your skin surface are totally restored every two weeks. Bone is replaced about every 10 years, whereas muscle and gut tissue take about 15 to 16 years. As a general rule, then, I guess you could say most of your body is still too young to drive.

Certain areas, such as parts of the brain, are as old as you are—which stands to reason, since you would want to retain the knowledge you've acquired since birth. It appears that cartilage also has a very slow turnover rate. The exact rate hasn't yet been determined, but I'm sure the slow rate stems in part from the lack of blood supply.

If you abuse your cartilage, you can't return it for new or take it in for warranty work. For that reason, it's imperative that you invest the effort to take care of your joints.

I have no doubt that many of the dramatic changes in our diet and lifestyle during the last century are only contributing to our joint mobility problems.

I've stressed the importance of adequate amounts of pure water more times than I care to remember. To stay fully functional, cartilage has to be fully hydrated. As children, our cartilage was made up of almost 85 percent water, but as we get older that drops to 75 percent in most cases—and even lower if we remain in a state of dehydration. Lots of water translates into more resilient joints. And, regardless of what the advertisements claim, sodas and sports drinks aren't good substitutes.

I've discussed before how the phosphoric acid in soda leaches minerals from bones and leads to osteoporosis. This acid also suppresses your ability to absorb the trace mineral manganese. Chiropractors have known for decades that patients with low levels of manganese never seem to be able to "hold" their adjustments. While full-blown deficiencies are somewhat rare, even a low level of the mineral significantly weakens the stabilizing ligaments that surround and support your joints. As a result, the joints become unstable and subject to an increased risk of subluxation, dislocation, and injury. Patients who increase their intake of manganese or manganese-containing foods will very often notice they need far fewer adjustments.

With the right diet, you can get adequate amounts of manganese if its absorption isn't blocked or suppressed by such things as sodas. Chronic liver or gallbladder disorders or excessive sweating can also contribute to low levels. Some of the most manganese-rich foods (pineapple, spinach, mustard and collard greens, long grain brown rice, and various kinds of beans and legumes) are not the dietary staples they were in years past.

I would recommend checking your multi-vitamin/mineral supplement to make sure it has at least 5 mg of this mineral. Avoid sodas like the plague, and start to include more green leafy vegetables and beans in your diet to help save your joints.

More Help From the Cow Contingent

Butter is another food item that has fallen out of favor during the last few decades. Everyone seems to have fallen for the marketing propaganda that butter is fattening and not "heart healthy." In addition to being a great food, butter contains two components you rarely hear about anymore: Activator X and the Wulzen anti-stiffness factor.



NEWS TO USE FROM AROUND THE WORLD

Picking On My Brother-in-Law Again

TAIPEI, TAIWAN—We've seen it before, but new research confirms that grilling meat at high temperatures creates a number of harmful compounds.

This new study performed at the Fu Jen University in Taipei, however, didn't just redefine the problem. It also uncovered an easy way to reduce the levels of some of these compounds.

The researchers were originally looking to calibrate a new method of measuring these byproducts, called cholesterol oxidation products (COPs). In the process, they discovered that a marinade of plain soy sauce cut the production of COPs by more than 60 percent. (*J Agric Food Chem* 06;51(13):4873-4879)

High heat from the open flame creates COPs, which are highly carcinogenic. (Lower temperatures, even sautéing and broiling, don't seem to have the same effect.) These COPs are similar to the oxidized cholesterol found in your bloodstream.

Along with the COPs, high heat creates other groups of harmful compounds. One type is heterocyclic amines (HCAs), which I've written about before. Research shows that adding tart cherries, red grapes, or plums (all good sources of pigmented antioxidants) to hamburger meat can cut HCA formation by 94 percent. Somehow, the idea of fruit-flavored meat didn't sound all that appealing, but I've tried using the cherries and it's pretty tasty.

Another group is polycyclic aromatic hydrocarbons (PAHs). These compounds are formed by the incomplete combustion of organic material—including the fat from grilled meat. (Interestingly, PAHs are also found in highly processed vegetable oils. The worst source is margarine—yet another reason to stay away from the stuff.) The compounds are found both in the meat itself and in the air in and around the cooking space. In one Chinese study, street vendors who sold meat products, including fish balls and rice sausages, had 22 times the exposure to PAHs compared to vendors of non-meat items such as roasted corn on the cob. (*Food Addit Contam* 91;8(4):517-530) (*J Expo Anal Environ Epidemiol* 05 Dec 14; [Epub ahead of print])

Activator X was identified by Dr. Weston Price as a fat-soluble catalyst found in butter oil and meat from animals that are fed a high-quality grass diet. It's also found in some fish eggs. Dr. Price's research indicated that Activator X is an excellent source of fat-soluble vitamins, and that it improves one's ability to absorb minerals. It also plays a key role in the repair and rebuilding of bone, the development of the nervous system, and the production of hormones. In his studies of indigenous

It's easy enough to mix a handful of crushed cherries or grapes into a pound of hamburger or ground turkey, but there's no practical way of using the fruit on a solid piece of meat such as a steak, chop, or poultry part. So, for the best protection, I'd stick with the marinating method.

For your end-of-summer barbeque, you can prepare a marinade with a cup of soy sauce, a couple tablespoons of honey, a teaspoon or so of powdered ginger, and a couple crushed cloves of garlic. (You can make this a day ahead and store it in the refrigerator.) Marinate the meat in the refrigerator for three or four hours before you're ready to cook.

The benefits of the marinade appear to come from the soy and the sugars. Traditional recipes of the Taiwan street vendors use marinades that contain about 10 percent soy sauce and one percent sugar (which lowers the COPs by 60 percent). This ratio will give you some basis for creating your own marinade.

Barbequing and grilling meat is a long, time-honored tradition down here in Texas. After learning how to weld in high school shop class, building a barbeque pit is usually the first project for a lot of Texas kids—and, for some reason, it's just the start of a lifelong quest to invent the best one ever made. Swapping tips and hints about the best wood to use and the best brisket rubs is a favorite pastime in these parts.

These Texas traditions are why I hate to report this kind of research—I feel like a traitor, especially to my brother-in-law, Troy. Give him a brisket, a couple of chunks of oak firewood, and a half a case of beer (maybe not in that order), and he'll come back in 15 hours or so with barbeque that will convert a hardcore vegetarian.

I don't mind mixing berries with my hamburger on occasion, and I'll marinate my chicken legs before grilling. But for now, I'll let Troy use whatever rub he wants on the brisket and just take my chances.

One positive, or should I say upbeat, and practical aspect of this study was the finding that COPs are only harmful when consumed in very large quantities. The researchers discovered that in addition to using marinades, the reduction could also be achieved by not eating the charred bits of fat on the barbequed meat.

populations around the world, Dr. Price felt it was one of the key factors in the prevention of many health problems—such as joint immobility.

The Wulzen anti-stiffness factor found in butter oil was discovered by Rosalind Wulzen. The compound helps protect against degenerative arthritis and other conditions—such as atherosclerosis, cataracts, and other conditions involving calcification of normal tissue.

The Test of Time: *Benefits of B3*

Early studies have documented that everyone past the age of 20 has some degree of change taking place in the cartilage lining their joints. The difference is simply the result of wear and tear on the joints. And it stands to reason that individuals who have subjected their joints to more trauma will exhibit more changes.

By the age of 40, 90 percent of the population have definite signs of osteoarthritis that can be demonstrated by X-ray. Even at this point, the majority of these people will still not experience any of the characteristic symptoms, such as joint pain, stiffness, or immobility. (*JAMA* 55;157:487)

Fortunately, Dr. William Kaufman has shown that niacinamide (a form of vitamin B3) can go a long way in both preventing and minimizing cartilage changes in joints.

Over several decades of practice, Dr. Kaufman documented hundreds of cases of patients who became more mobile and self-sufficient after long-term niacinamide therapy. His case histories, supplemented with photos, show people who were unable to raise their arms above shoulder level before treatment. After several months on niacinamide, they could easily raise them above their head.

What makes these cases even more remarkable is that these patients also reported a decrease in joint pain and inflammation. Niacinamide is not considered an anti-inflammatory compound or analgesic. Apparently, it is niacinamide's ability to trigger actual repair of the joint surfaces that leads to the dramatic reduction in pain and inflammation.

I want to mention, though, that niacinamide is not a cure-all or something that will work in every

single case. Obviously, some joints have been damaged so severely that nothing will help. There are a few other circumstances I can think of that can interfere with niacinamide's effectiveness in treating arthritis and other conditions.

- Adequate protein is necessary for joint repair. Cartilage is high in protein, and without an adequate intake of protein, repair can't take place. That is why I suggest you take a whey protein powder supplement if you suffer from arthritis.
- All the B vitamins work in conjunction with each other. Therefore, you can expect better results if you take niacinamide along with a good multivitamin containing a broad balance of B vitamins.
- Don't expect a joint to heal properly if it is continually being traumatized by repetitive use or abuse. Arthritis in the knee joint won't heal, for example, if one continues to jog or bang on a carpet stretcher (if that happens to be your line of work). Additionally, obesity creates constant trauma to the weight-bearing joints. One way to minimize routine joint pressure is by wearing shoes with thick, shock-absorbing soles.

In cases of moderate arthritis, 1,000 mg to 1,500 mg daily have produced outstanding results. (*Am J Clinical Nut.* 85;14:356) In more severe cases, as much as 3,000 mg to 4,000 mg have been recommended. In all instances, the dosage should be divided into five or six doses and taken throughout the day rather than all at once—and with the knowledge and supervision of your nutritionally oriented doctor, of course.

Tip from Vol. 7, November 1997

(Both Activator X and the Wulzen anti-stiffness factor can be destroyed with the excessive heating and pasteurization procedures dairy products are now subjected to. The best source is raw milk and dairy products from grass-fed cattle. If you don't have access to raw milk products, both of these compounds are present in a product called X-Factor Gold, made by Green Pastures, 50932 872nd Rd, Page, NE 68766. They can also be reached at 402-338-5551 or on the Web at www.GreenPasture.org. They offer a 10 percent discount on combination orders of one jar of butter oil and one jar of cod liver oil. Note that they are a small company, so please be patient if you call and can't get through right away.)

Be Mobile With B Vitamins

One other important nutritional component for joints is niacinamide (a form of niacin or vitamin B3). Dr. William Kaufman performed extensive studies that demonstrated the amazing therapeutic effects of niacinamide in the treatment of osteoarthritis and impaired joint mobility. [Editor's note: Please see "The Test of Time" above for a summary of niacinamide, or refer to Vol. 7, No. 5, November 1997, for a more complete discussion.]

I predicted several years ago that various vitamin B deficiencies would become a major underlying factor in the increases we were seeing of many diseases. It has

turned out to be an accurate prediction—though, for everyone's sake, I would prefer to have been wrong.

One primary factor triggering vitamin B deficiencies is the increased use of over-the-counter and prescription drugs. The proper absorption of the B vitamins requires high levels of active bacterial flora in the bowels. Antibiotics, diuretics, oral contraceptives, acid blockers, all forms of anti-cholesterol medications, and practically all forms of pain killers either interfere with vitamin B absorption and/or destroy beneficial bacteria flora in the bowels. Nowadays, it's difficult to find someone over the age of 50 who isn't taking one of the above drugs on a regular basis. (*INTERACTIONS The IBIS Guide to Drug-Herb, Drug-Nutrient Interactions, Integrative Medical Arts, 1999-2001*) (*Drug Induced Nutritional Deficiencies, AVI Publishing Co., 1976*)

A Depressing Approach to Joint Health

The chapter on the "Care and Maintenance of Joints" wouldn't be complete without mentioning cortisone. For someone with joint pain and limited mobility, cortisone injections are often presented as the solution. They are *not* the solution.

Cortisone works by suppressing and blocking the normal response of your immune system. A cortisone injection will often instantly relieve the pain and enable the return of almost normal joint mobility. Unfortunately, the relief will be only short-lived—and when the body's warning system (pain, discomfort, limited motion, et cetera) is shut down, it's easy to cause additional damage to the area without knowing it. After a few series of injections, the subsequent buildup of adhesions, scar tissue, and damage often leaves surgery and/or joint replacement as the only options. Most people aren't told this when they start cortisone treatment. They also aren't told it could very well be the trigger that ends your life.

Cortisone depresses the immune system. That's how it works. It doesn't matter if you use it topically, orally, or by injection. It stops pain, inflammation, swelling, itching, and a long list of other symptoms simply by blocking the normal response of your immune system.

It's well known that cancer cells are formed in everyone throughout our lives. Luckily, our immune system is able to recognize most of these abnormalities and destroy them before they become major problems. We also know that before a cancer is discovered it has often been present in the body for years, if not decades, in a suppressed or somewhat dormant state. In large part, we also have our immune system to thank for keeping it dormant.

What do you think happens when you suppress an immune system that has been keeping a form of cancer, viral infection, or other pathogen in check for years? It doesn't take a rocket scientist to figure that out. It's like opening Pandora's box. If you want to see what's been lurking inside your body all these years, just knock your immune system out or weaken it with drugs like cortisone. Then sit back and see what happens. It might not spring up overnight. In fact, you might not see the effects for a year or two (or even longer). But suppressing your immune system is serious business, and not an action you should take lightly. It is particularly dangerous if you've ever had cancer and are currently in remission. It's proven that dormant tumors can quickly re-awaken during times of increased physical or emotional stress, both of which weaken the response of your immune system. Cortisone is *not* the answer for joint problems.

There will be a day when repairing and renewing joint surfaces will be a safe and very easy procedure. In the not-too-distant future, I truly believe that we'll be able to inject stem cells into a joint and miraculously watch the formation of a new layer of cartilage (if not in the US, then in other countries). I don't have any idea how far away that day will be, nor the cost. For now we have joint replacement surgery, which has undoubtedly come a long way and improved the lives of thousands. Personally, however, I'd prefer to avoid both of these procedures if possible. Hopefully, by following the steps and suggestions I've outlined above, we can do so together.

Take Care,

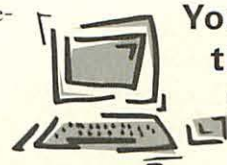
Dr. David Williams

If you have questions or comments for Dr. Williams, please send them to the mail or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

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Mountain Home Publishing

Special Report



Dr. David G. Williams

Topics in This Report

The Fat-Balancing Act	1
The Liposuction Pill	2
Flax For Health	3
Go Nutty	3
Foods That Aren't What They Seem	4
Follow the French Model of Moderation	5
Steer Clear of Fructose in Isolation	6
It Might Be Your Thyroid	7
Build Muscle and Shed Fat	8

The Mysterious Fat-Burning Secret of New Zealanders

In an overweight society that consumes far too many carbohydrates, diet doctors have had an easy time selling high protein/low carbohydrate diets or diets that eliminate virtually all fats. While these diets do take off weight, the minute you go back on a balanced diet your body will quickly stock up on the nutrients it's been missing and you will put weight back on—fast. The truth is: to remain healthy or to regain health, your body needs fresh air, clean water, sunshine, and exercise. It also needs a balance of proteins, carbohydrates, and fats. Yes, fats—the kinds that actually make your body work more efficiently.

THE FAT-BALANCING ACT

All fats are not equal. The diet of our ancestors included a good balance of essential fatty acids (EFAs, also called vitamin F), particularly omega-3 fatty acids (found in flax oil, fish, wheat germ, pumpkin seeds, and walnuts) and omega-6 fatty acids (found in safflower, sunflower, canola, soybean, sesame seeds, and pine nuts). These fatty acids are called essential because our bodies can't make them and we must get them from food. Unlike saturated fats—from animals, butter, whole milk, and vegetable oils that are solid at room temperature

(such as margarine)—which raise cholesterol levels, essential fatty acids are critical components of every nerve cell and cell membrane, as well as prostaglandins.

A healthy balance is four of the omega-6 fatty acids to one of the omega-3 (4:1). But today the ratio is anywhere from 20:1 to 25:1! The reasons for this are simple:

- We eat too few omega-3-rich foods in proportion to the omega-6 foods we take in. Omega-3-rich foods like eggs have fallen out of favor, and the most popular seafood (salmon, trout, catfish, and shrimp) that used to provide an omega-3-rich diet are now being grown on farms where they're fed omega-6-rich grains and grain byproducts.
- Vegetable oils—practically every fried food or snack food is cooked in omega-6 oils.
- Most prepared salad dressings contain omega-6-rich oils rather than the neutral omega-9 virgin olive oil or omega-3 oils. This is because omega-6 oils have a longer shelf life.
- Most of our meat comes from beef, chicken, and pigs that have

been fed mainly corn and corn oil diets high in omega-6 EFAs.

- We clog our arteries and accelerate aging by consuming hydrogenated, oxidized, and trans fatty acids found in margarine, fast foods, and snack foods. And even though you are getting some omega-6 fatty acids, in fact, the usefulness of these fats is diminished by food-processing methods. Convenience is making us sick.

Robbed of the essential fatty acids it needs to function, your body converts carbohydrates into fat. Fortunately, in this special report I've identified alternatives to dieting that can restore balance, help prevent other health problems, and give you the edge you need to fear no food.

THE LIPOSUCTION PILL

The latest nutrition research indicates that the dramatic decrease in our consumption of conjugated linoleic acid (CLA) is linked to the increase in the incidence of obesity and other health problems. Linoleic acid is one of the good omega-6 fatty acids. CLA is found in beef, lamb, turkey, and milk products from animals that are range-fed; but when cows eat prepared feeds rather than grass, the CLA content of milk and other dairy products drops to less than half. So even if we increase our intake of dairy and beef, we're not likely to get the CLA we need.

The good news is, we can take CLA in a pill form called Tonalin. Most of the research has been done using Tonalin CLA so it's important to look for the Tonalin label to ensure you're getting a quality CLA product. There are companies out there selling vegetable oil and calling it CLA (Tonalin CLA comes from safflower oil, but is a conjugated product that is quite different from common vegetable oils.). You won't get the same results I'm about to discuss by using vegetable oil. But before I tell you how much to take each day, I want to tell you the rest of the story about CLA.

WEIGHT LOSS AND REDUCTION OF BODY FAT

In 1998, researchers in Louisiana found that when CLA was included in the diet of mice, there

was a 43 to 88 percent reduction in body fat in just six weeks. Even more encouraging, the area that appeared the most sensitive to CLA was the fat in the abdominal region. (*Am J Physiol* 98; 275 (3Pt2): R667-72)

CLA triggered the loss of body fat by increasing the metabolic rate, decreasing the appetite, and causing more body-fat cells to be used for energy production. Follow up studies by this same group of researchers revealed that CLA's ability to help lower body fat worked with both high- and low-fat diets. In addition to the body-fat reduction, CLA also increased muscle mass. (*Am J Physiol* 99; 276 (4Pt2):R1172-9)

Human studies testing CLA's ability to reduce body fat in obese individuals have recently been completed and the results are nothing short of amazing. Body fat was reduced by 20 percent over a 12-week period simply by adding CLA supplements to the diet.

In a Norwegian study, people taking 3.4 grams per day saw the same benefits as those taking 6.8 grams per day. (*J Nutr* 00; 130 (12):2943-8) This weight loss was achieved without any changes in diet or exercise. These results indicate that supplementing a balanced diet with 3.4 grams of CLA per day will help you to lose fat and gain muscle. Remember, muscle is heavier than fat so you might not see a drop in your actual weight at first.

CLA is safe and non-toxic. It's possible you are getting some CLA from your diet, but certainly not enough. Whole milk, butter (throw away that margarine), cheeses such as cheddar, blue, brie, edam and Swiss, beef, lamb, yogurt, and turkey are sources of CLA; but they are less than reliable, as I've said, because of modern feeding methods. Even if you could find a good food source, it's very difficult to ingest anywhere near 3.4 grams of CLA each day from diet alone.

That's why I recommend including the foods I've mentioned above in your daily diet and supplementing with Tonalin CLA each day. Each Tonalin softgel contains 1,000 mg (1 g) of safflower oil, 750 mg of which is CLA. I recommend taking three Tonalin softgels daily which will give you 3,000 mg

(3 g) of CLA. Tonalin CLA can be found at your local health food store. You can also order it from iherb (888-792-0028 or www.iherb.com) or the Vitamin Shoppe (800-223-1216 or www.vitaminshoppe.com).

FINAL WORDS ON CLA

If you're not concerned about weight loss, there are other very compelling reasons to include CLA in your daily diet. Recent research indicates that CLA, which converts to hormone-like substances called prostaglandins in your body, has a significant impact on cancer, diabetes, cardiovascular disease, the immune system, and bone and joint health. Very briefly, CLA:

- May reduce tumor growth and slow the development of prostate and breast cancers by inhibiting inflammation, interfering with tumor growth factors, and impeding uncontrolled cell division;
- Helps move glucose into cells so that the need for insulin is reduced;
- Helps prevent clogging of the arteries by stabilizing LDL cholesterol so that it is less susceptible to oxidation;
- Helps support fat transport across cell membranes so that the heart can use those fats for energy;
- Helps support immune system response.

FLAX FOR HEALTH

When it comes to correcting your fatty acid ratio, and getting your body to be a fat-burning rather than fat-building machine, I have some other good news. You can easily supplement your diet with omega-3 fatty acids. The two most readily available sources are fish and flax. Since fish contain less omega-3 fatty acids now that they are farmed, and fish oil is expensive to take on a regular basis, I recommend flaxseed and flax oil.

The omega-3 fatty acids in flax oil and flaxseed can increase your metabolic rate so that you burn fats more quickly. They can also increase energy production, facilitate oxygen transfer, lower blood

pressure, and decrease the stickiness of your blood platelets.

Start with three tablespoons of flax oil daily. Continue this dose for several months until you've lost the weight you desire or your weight stabilizes. Then cut back to one or two tablespoons a day to keep yourself in good health. Make sure you get a fresh product from your health food store and keep the oil in the refrigerator. The best flax oil I've located so far is made by Flora, Inc, called Flora Flax Oil (800-446-2110). A tasty alternative to the oil is to grind the flax seeds yourself. Grind only enough seeds (two or three tablespoons) for each use.

Don't expect miracles overnight. Restoring your EFA ratio could take six months or more. Fats and fat-soluble supplements take longer to saturate your tissues than water-based supplements like vitamin C. And beneficial fatty acids must gradually replace unhealthy fatty acids, toxins, and other components in your cell walls.

GO NUTTY

Another delicious way to take in essential fatty acids is to include raw nuts in your diet. Research repeatedly has shown that by simply eating nuts you can improve your cholesterol and triglyceride levels, reduce your risk of heart disease, and lose weight! My favorites are walnuts, pecans, almonds, hazelnuts, and Brazil nuts.

Contrary to all the diet books you've read, nuts are a nearly perfect food. Three ounces of nuts a day can lower LDL cholesterol in a period of five weeks. In the ongoing Nurses Health Study, researchers found that women who regularly ate as little as five ounces of nuts a week had one-third less likelihood of heart attack than women who rarely ate nuts. (*Brit Med J* 98;317 (7169):1341-5)

Not only are nuts the perfect storehouse for essential fatty acids, they are a good source of minerals like magnesium and potassium and the amino acid arginine, which the body uses to make nitric oxide. Nitric oxide improves blood flow to the heart muscle in times of low oxygen levels and acts as a powerful antioxidant.

Cheap Fat Burner

The news on green tea just keeps getting better. It began when study after study showed that green tea or green tea extracts had significant cancer preventive effects in animals. One of the most interesting findings was that drinking at least one cup per week for six months or longer reduced the risk of esophageal cancer in women by 50 percent. In more than 30 abstracts of research on animals, green tea has been found to reduce tumors, cause partial regression of skin cancer, and inhibit the growth of tumors in the colon.

Green tea also appears to increase the body's metabolic rate and burn fat. That was the result of a Swiss study in which 10 men were given two capsules containing 90 mg of green tea extract with each meal. They burned four percent more energy (80 calories) than on the days they didn't receive the capsules. What made the study even more interesting was that there were no other changes made in the men's lifestyle or eating habits. (*Am J Clin Nutr* 99; 70(12):1040-1045)

Laboratory studies with green tea show that it is rich in polyphenols, which make its antioxidant powers work better than vitamin E, according to some researchers. Green tea has half the caffeine of coffee, and two cups of the tea contain the same amount of vitamin C as one cup of orange juice. It's also a weak antibacterial and may help prevent tooth decay. Green tea has shown no toxicity and no adverse effects on fertility, pregnancy, or nursing. The dose for weight loss in the Swiss study was 90–100 mg of green tea extract with each meal. Look for an extract standardized to 50 mg of catechins (polyphenols) per capsule. Green tea can be found in health food stores. I've also found an online source, www.naturalconnections.com, which offers the extract in 100 mg capsules.

If you're a coffee drinker, consider replacing most of your coffee consumption with green tea, for its health benefits.

FOODS THAT AREN'T WHAT THEY SEEM

It is reported that there are now over 5,000 low-fat and fat-free food products on the market in the United States. And while I think many of these products can be part of a healthy and beneficial diet, they certainly haven't been the answer to the obesity epidemic in this country. Even the American Heart Association has announced that low-fat and fat-free products are one of the major contributors to the unprecedented rise in obesity and diabetes.

Consumers have been led to believe that obesity and cardiovascular problems are caused by too much fat in the diet. Because of this belief, many people feel they can consume as many fat-free foods and snacks as they like. What they're not being told is that these foods are generally high in sugar and artificial sweeteners, and very often higher in calories than the full-fat products. This has resulted in the incidence of obesity doubling in the last 20 years and the number of people with type 2 diabetes increasing by one-third in just the last ten years.

THE DEADLY WHITE POWDER THAT'S LEGAL

Longtime readers of *Alternatives* know that I think sugar has become one of the primary factors associated with the declining health of our society. Man has historically been able to adapt to his changing sources of food. In the beginning, he was basically a gatherer and later began hunting, then farming. The food supply changed from nuts, berries, and roots to animals and fish, then later to grains. It took thousands of years to adapt to these changes.

Sugar, which has become one of the major components in our diet, has only been in wide use for the last couple of hundred years. Prior to this time, sugar was a treasured and expensive commodity. Our bodies aren't equipped to handle the quantity of sugar we now consume, nor have they had time to adapt to these levels. Based on the unbelievable number of individuals suffering from diabetes, it should be obvious to everyone that the pancreas is not able to handle the constant high blood-sugar levels from our current diet.

IT'S ALL IN THE PANCREAS

Among conventional circles, the idea that obesity causes diabetes has been accepted theory for the longest time. It appears, however, that a failure of the pancreas to properly control insulin may be one of the primary causes of obesity. And the pancreas is beginning to fail at a rate never seen before in history. There's a distinct link between the increase in our sugar consumption and pancreatic failure.

Obviously, some people are born with a stronger pancreas than others. This helps explain why some individuals are able to eat tons of sweets and stay skinny all their life. And then there are those individuals who start out that way, but once their pancreas finally fails they start to put on weight like never before. Those with a weak pancreas from birth end up fighting a weight problem all their life.

Unfortunately, most doctors haven't made the connection between obesity and the inability to properly handle blood sugar. In fact, most blood tests still show that a fasting blood sugar level is anything below 110 mg/dL. An individual with a reading between 110 mg/dL and 125 mg/dL is considered "pre-diabetic," and someone with a reading above 125 mg/dL is considered diabetic.

But based on more recent research and to be on the safe side, I recommend that your fasting blood sugar should be no higher than 90 mg/dL, and around 80 mg/dL would be even better. If it's any higher, it should sound an alarm. It's much easier to correct the problem in the early stages. Unfortunately, for now, it appears that as a society we're taking the wrong approach to this problem.

FAKE SWEETS CREATE REAL PROBLEMS

Rather than removing sugar from our foods, we've just replaced it with artificial sweeteners. Even though we still don't understand the long-term effects of introducing these artificial compounds into the body, the reactions they trigger may be even more dangerous than those of sugar.

Artificial sweeteners certainly give the sensation of sweetness and, in turn, trick the body into believing it is getting ready to digest a

carbohydrate. Since the most popular artificial sweetener, aspartame, is a chemical combination of two amino acids, the carbohydrate never comes. One or both of two things might happen. First, if the aspartame-containing food or drink (such as a cola) is taken with a food that is high in carbohydrates, the pancreas might release far too much insulin, triggering hyperinsulinism, insulin resistance, etc. Second, the next time your body encounters a real carbohydrate, it might compensate for its prior absorption "failure" by becoming more efficient at absorbing the carbohydrate, which would also create the need for more insulin.

So, if you want to control your weight and maintain overall health you need to reduce or eliminate sugar and artificial sweeteners from your diet and not depend on low-fat or fat-free foods, which may actually do more harm than good.

FOLLOW THE FRENCH MODEL OF MODERATION

By comparing different populations around the world, the obesity problem in the U.S. becomes obvious. While most industrialized countries seem to be following in our footsteps when it comes to poor eating habits, one country has taken a different approach. You may criticize the French for a variety of reasons, but their populace has stayed mostly lean.

The French focus on nutrition got its start in the late 1800s, when the infant survival rate in France was significantly lower than that of other European countries. To help resolve the situation, French midwives established special care units for sick newborns. The first of these puericulture centers was established in 1892. A primary function of these centers was to educate young mothers on the importance of proper infant nutrition, health, and hygiene. Within a decade or so, infant survival rates in France were as good as anywhere in Europe. (*J Perinatology* 02;22(Vol.1):75-77) The puericulture movement continued, however, and attention was later focused on preventing childhood obesity.

Steer Clear of Fructose in Isolation

Fructose, as you may know, is a form of sugar that occurs naturally in fruit and honey, and has a low glycemic index. Based on these characteristics, it has often been assumed to be a good substitute for sucrose, or white sugar. It's not.

There's nothing wrong with eating fruit and moderate amounts of honey. While these foods get their natural sweetness from fructose, they also contain minerals, antioxidants, and/or fiber and other beneficial compounds. Fructose by itself, however, is a major problem.

In just the last 30 years or so, fructose in the form of high-fructose corn syrup (HFCS) has become one of the primary sweeteners in our food supply. Corn syrup alone is composed mainly of glucose. HFCS is a concentrated product produced by converting much of the glucose to fructose. Food companies like it because it is less expensive yet sweeter than cane sugar. Undoubtedly, the public's major source of HFCS comes from soft drinks, but it's hard to find any sweetened food product that doesn't now contain HFCS.

I've been warning about the dangers of HFCS for years, and one of the latest studies from the University

of Pennsylvania supports the idea that HFCS impairs your body's ability to recognize when it is full. These new findings take this idea beyond just a theory and unveil the exact mechanism of how this process takes place.

Fructose doesn't stimulate an increase in insulin the way most sugars do, nor does it cause an increase in the compound leptin—both of which signal the body's central nervous system to stop eating. Leptin also helps to limit fat storage and increase your metabolic rate to burn excess fat. Fructose also increases the level of another compound, ghrelin, which enhances the desire to eat more. In simple terms, fructose completely disrupts your body's natural ability to tell when you're satisfied and should stop eating—which ultimately leads to weight gain and obesity. (*J Clin Endocrinol Metab* 04;89(6):2963–2972) (*Am J Clin Nutr* 02;76(5):911–922)

It's practically impossible to avoid all HFCS-sweetened products. You can avoid sodas, though. And it would be wise to check food labels and avoid HFCS when possible, particularly when it is one of the main ingredients.

Puericulture is still practiced in France, instilling proper eating habits in its citizens practically from birth. Feeding times are strictly maintained. Kids are not rewarded with food and not allowed to eat snacks. Children are weighed weekly, and what and how much a child eats are always monitored by an adult. Adults ensure that portions of food are adequate yet moderate, not excessive. Desserts are limited in size and only available during holidays. From childhood on, kids learn that eating too much food is both unhealthy and bad. When you compare this to our habits and attitudes, it's not hard to see why we're in the trouble we're in today.

In all honesty, most parents in this country don't have a clue about proper nutrition so it would be hard to expect them to educate their children. Adults certainly don't monitor their children's weight. And can you imagine the consequences of telling an American child they

were overweight? It would border on child abuse. We've been brainwashed into believing that talking to a child about being overweight (we used to say "fat") will cause them to develop low self-esteem, a poor body image, or depression. The fact of the matter is that overeating and obesity are unhealthy and dangerous. Thousands of studies detail these dangers, and hard evidence supports the fact that overweight children tend to be overweight or obese as adults. I've yet to see research which shows that being honest yet loving and supportive with children is dangerous to their health.

I'm not talking about being cruel to children. This is about saving them from a lifetime of illness and suffering and an early death. Keep in mind that it's one thing to continually criticize a child for being overweight, but it's quite another to help a child maintain proper weight by monitoring weight, feeding them properly, keeping an

It Might Be Your Thyroid

If you are having difficulty maintaining your normal weight, it might be due to your thyroid. An underactive thyroid causes millions of Americans to experience exhaustion, an inability to concentrate, and the piling on of unwanted pounds, even when their eating habits have not changed.

Basically, hypothyroidism is the failure of the body to produce adequate amounts of the important thyroid hormone thyroxine that regulates many functions, including metabolism and the conversion of food into energy.

The mineral iodine is essential in the production of thyroxine, but there is less and less of this important mineral in our diets. Unfortunately, you can't get iodine by increasing the amount of table salt in your diet because most of our table salts are no longer iodized.

In addition to iodine deficiency, my research indicates that selenium deficiency and estrogen-like pollution, from sources like PCBs, dioxins, and pesticides, such as lindane or dieldrin, also block thyroxine production.

Hypothyroid Self-test

Take this simple test to determine whether your thyroid is balanced. It takes only three steps:

1. Place an oral thermometer by your bed at night, and shake it down to at least 96 degrees.
2. When you wake up the next morning, immediately place the thermometer in your armpit and leave it there for 10 minutes before getting out of bed. Relax and remain still. (Note: Men and postmenopausal women can do the test any time. Women in their menstrual years get the most accurate readings on the second or third day after menstrual flow starts.)
3. Record the temperature. A reading of anywhere between 97.2 and 98.2 degrees is considered normal; temperatures below 97.2 degrees generally indicate you have a thyroid imbalance.

Natural Solutions for Underactive Thyroid

If your thyroid is unbalanced, one of the most effective ways I've found to rebalance it is to take a liquid iodine product called losol. For the first two weeks, take four drops of losol in water each day; then reduce the dosage to two drops daily. (Under no circumstances should you ingest antiseptic or topical iodine.) losol can be found at your local health food store.

If the losol alone does not seem to alleviate the symptoms of hypothyroidism, then I suggest you take three tablets of a glandular product called Thyrophin along with just one drop of losol per day. Thyrophin can often be used in place of prescription thyroid medications. In my opinion, the best and most reliable Thyrophin is made by Standard Process (800-848-5061). The only downside is that they only sell to doctors. If a doctor in your area doesn't carry this product, he/she can order it for you.

Other safe, natural, and effective ways you can correct an underactive thyroid include taking:

Zinc for proper thyroid hormone metabolism, 30–50 mg per day. Keep in mind that it may take months for oral zinc supplementation to affect a chronic thyroid problem. *Note:* If you take 30 mg of zinc, you should also take 2–3 mg of copper since zinc can interfere with copper absorption (and vice versa).

Selenium, 70–200 mcg daily. Also eat selenium-rich foods such as wheat germ, tuna, herring and other seafood and shellfish, beef liver and kidney, eggs, sunflower and sesame seeds, cashews, mushrooms, garlic, onions, and kelp.

Soy products like tofu and soymilk. For those who have an underactive thyroid, soy products can help mildly stimulate thyroid function. Certain other foods have the opposite effect—a tendency to lower thyroid function. These foods include turnips, mustard greens, broccoli, cabbage, rutabaga, Brussels sprouts, bok choy, cress, cauliflower, kale, and kohlrabi. Those with an underactive thyroid should avoid them, while people with hyperthyroidism, or an overactive thyroid, would do better to avoid the soy products and eat more cruciferous vegetables.

Continued from page 6

eye on food portions, and encouraging (through example) proper exercise.

If you think you would rather address the issue of obesity if and when you and/or your child face it rather than prevent it through the puericulture approach I just described, perhaps this might change your mind.

One recent study involved 8,203 girls and 6,769 boys between the ages of nine and 14. Their dietary habits and weight were monitored from 1996 until 1999. At the beginning of the study, 25 percent of the girls and 13.8 percent of the boys were already classified as "infrequent" dieters, and 4.5 percent of the girls and 2.2 percent of the boys were "frequent" dieters. As the study progressed, the percentage of dieters increased.

Researchers discovered that, during this short time, dieters actually gained more weight per year than non-dieters. This occurred even though the surveys indicated the dieters were more active and ingested fewer calories than the non-dieters. This same phenomenon occurs in adult dieters. Not only does dieting slow metabolism, it usually results in binge eating, both of which contribute to long-term weight gain. (*Pediatrics* 03;112(4):900-906)

BUILD MUSCLE AND SHED FAT

I'd be remiss if I didn't include three final tips for rescuing you from fad diets.

Eat hot peppers, or take capsules containing capsaicin from chili peppers. They safely increase energy levels and remove fat molecules.

Take 5 grams of creatine four times a day for seven days, then reduce the dose to five grams a day. You must also increase your water intake. Creatine is one of the essential components related to the creation of energy necessary for muscle

contraction. It is a nitrogen-type compound derived from the amino acids arginine, glycine, and methionine. It increases your body's ability to produce more lean muscle. It can help you recuperate from injuries and illness, improve heart function, and strengthen skeletal muscles. I add one five-gram scoop of creatine powder to juice each morning. I purchase my creatine from a company called Bodybuilding.com, 877-991-3411.

Use a sauna. Your body reacts to the heat of a sauna like it does to exercise. Your pulse rate increases to around 160 beats a minute, surface blood vessels open, and your heart pumps more blood to compensate. It won't strengthen your muscles, but by increasing your heart rate, it will help burn off fat. *Note:* Check with your doctor first to see if this is a safe method for you.

* * *

You no longer have to suffer the constant roller coaster effects of fad diets, losing pounds and then gaining back more than you lost. Instead, make the kinds of changes in your diet and lifestyle that you can stick with forever. Eliminate the refined sugars, sweets, and simple carbohydrates from your diet. Increase your vegetable and fruit intake. Cut back as much as possible on prepared foods, and include more raw foods. Get away from the television and start walking, weight lifting, bicycling, swimming, jogging, and moving more. If you're going to go to all the trouble to make changes in your life, at least make changes that can have a permanent effect on your health.

Dr. David Williams

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FOR THE HEALTH-CONSCIOUS INDIVIDUAL

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Dr. David G. Williams

A Little Homework Could Save Your Life

There's an old joke about how doctors are much better off than architects. A doctor can bury his mistakes, while the architect can only plant ivy. It's true that incompetent (or just plain unlucky) doctors and hospitals could once bury their mistakes and no one would be the wiser. Fortunately, with tools like the Internet to expose "the good, the bad, and the ugly," that situation is starting to change. As more information becomes available, it's getting easier and easier for us to check the past performance records of our doctors and hospitals. And spending a little time doing so could end up saving your life.

One recent study has found that if you do need to enter a hospital, choosing a top-rated one can increase your chance of survival by as much as 28 percent when compared to other hospitals.

Each year a company called HealthGrades assesses admissions at all 5,122 of the nation's non-federal hospitals, and ranks the institutions based on their mortality and complication rates. Just a few years ago this ranking was difficult to do because many hospitals failed to provide such information. Hospitals no longer have that option, and, better still, the information is now available publicly.

The latest evaluation found that 158,264 deaths and 12,409 major complication events could have been avoided between 2003 and 2005 if the quality of care at all hospitals had matched those in the top 5 percent.

It's now easy to check the rating of your hospital by going to the Web site www.healthgrades.com. Each hospital is rated on over thirty different procedures and categories (everything from appendectomy to women's health). The possible grades are "Best," "As Expected," and "Poor."

I checked two of the hospitals in my area that are located about 20 miles apart. I chose to check on treatment qual-

ity for heart attack because it's one of the leading causes of death. One of the hospitals was rated "As Expected" and the other, the larger and fancier one, was rated as "Poor." Just to make sure this rating difference wasn't a one-time fluke, I also checked their rating histories for the last three years. They were the same.

In practical terms, I live an almost equal distance from the two hospitals. If I turn left out of my driveway, after 10 miles I end up at a hospital that has some of the highest death and/or complication rates nationwide in treating heart attacks. If I go to the right for 10 miles, I can get to a hospital that at least meets the national average in survival rates. By going straight out of my driveway for about 60 miles, I get to a hospital that is rated in the top 5 percent of the nation in the treatment of heart attacks. By taking this last route, this latest study indicates, I would increase my chance of surviving a heart attack by 28 percent.

If you've got access to the Web, I would highly recommend spending a couple of minutes checking out



In This Issue

A Little Homework Could Save Your Life . . .	161
Grab Your Partner, Do-Si-Do	162
Your Future Is In Your Hands	163
Mailbox: Tests Don't Tell the Tale	164
Prevention of a Devilish Sort	165
News to Use: Foot Care; Wound Care; Tea With Milk	166

You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on. — Benjamin Franklin

the hospitals in your area. If you have a health problem be sure to check the rating of different hospitals for that specific condition. Some hospitals may be top-rated for heart problems but receive lower scores for something like prostate cancer or the treatment of a hip fracture.

The company also offers detailed checks on individual doctors and nursing homes. The hospital reports are free, but there is a charge for these other services. The in-depth report on a specific doctor costs about \$18 and the one covering ten area nursing homes is roughly \$20.

I ran one report on a local doctor and discovered his license had been suspended, revoked, and then re-instated after numerous accounts of drug abuse. He's certainly not someone I would want to trust with my life or that of a family member in an operating room.

The nursing home report was very helpful. It supplied a history of complaints, repeat problems, results of state inspections, and even ownership. I wish these reports were also free, but I think either one would be well worth the money if I were trusting my life to a certain physician or was forced to choose a nursing home for a loved one.

If you do nothing else, at least check the ratings of the hospitals in your area. You may find, as I did, that the best-looking, most modern facility may be the most deadly.

Grab Your Partner, Do-Si-Do

Several of your organs would make good candidates for a "hardest working" award. Your heart keeps beating from birth to death, and your liver is constantly at work processing waste. But your skin is a solid contender as well. It's the body's natural source of cholesterol, it regulates body temperature, and it repels invaders.

Skin is subject to physical damage—cuts, scrapes, and bruises—as well as constant attack from pathogens, from chemicals, and from radiation. This last creates effects that range from the desirable (a good tan) to the irritating (sunburn) to the dangerous (skin cancer).

Cancer has become a concern for many people. I honestly don't know if it's a matter of increased awareness

(thanks to the makers of sunscreens) or if the incidence of skin cancer has truly gone up. At any rate, the skin is currently the most common site for cancer to appear, with well over a million cases showing up each year.

Most skin cancers are not particularly invasive or dangerous. They appear in either basal cells or squamous cells, and typically aren't cause for much alarm. A third type, however, called melanoma, can develop quickly and spread to other tissues—where it can turn deadly.

As with most conditions, early detection leads to a better prognosis, and skin cancer is one of the most easily treatable forms of cancer. Dermatologists have long recommended that people check themselves often for signs of skin cancer.

Unfortunately, many people dismiss a skin spot by saying, "Oh, it's just a mole." It's important that you be able to tell the difference between an ordinary mole and a potentially cancerous lesion. The self-examination procedure taught most often is known by the ABCDE memory aid:

- A—Asymmetry** Moles are generally round, or nearly so. A skin lesion or spot that has an irregular shape is more likely to be cancerous.
- B—Border** Moles usually have a well-defined border. A darker patch that fades into regular skin color may indicate a disease process.
- C—Color** Moles are generally some shade of brown. A spot that is black, red, or even blue is worth having checked out.
- D—Diameter** Most moles are less than 1/4 inch in diameter. Anything larger than that has the potential to be a problem.
- E—Evolution** Moles generally stay constant in appearance throughout your life. You should address any spot that changes in one or more of the above characteristics.

A study just released shows that patients who learn the procedure with a partner are more likely to perform self-examinations for skin cancer. Researchers selected 130 people from a registry of patients who had had melanoma, and gave all the subjects instruction on how to



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Dr. Williams works closely with Mountain Home Nutritionals, a division of Doctors' Preferred, LLC and subsidiary of Healthy Directions, LLC, developing his unique formulations that supply many of the hard-to-find nutrients he recommends. Dr. Williams is compensated by Doctors' Preferred, LLC on the sales of these nutritional supplements and health products, which allows him to continue devoting his life to worldwide research and the development of innovative, effective health solutions.

perform the self-examination—including what to look for in skin lesions. Half the subjects received the instruction individually, and the other half had a “cohabiting partner” along at the time of instruction. During the next six months, those who had a partner were more convinced of the need for a self-examination, were more likely to actually perform the exam, and felt more confident about their ability to perform the exam. (*Arch Dermatol* 07;143:37-41)

Two thoughts come to mind. The first is that because all the patients in the study had previously had melanoma, they were probably fairly well motivated already to perform self-examination. The other is that working with a partner would make it much easier to examine certain areas of the body. Using a little contortion, you can look at your own back in the mirror, for example, but I haven’t found any satisfactory way to examine my scalp.

(As an aside, a report out of St. Louis University indicates that an increased amount of time spent driving is connected to an increased risk for skin cancer. Among a group of 1,047 patients with skin cancer, a significantly greater number of the cancers appeared on the left side of the body than on the right side. Areas typically exposed while driving—the head, neck, arm, and hand—showed the greatest amount of right-versus-left difference. Women didn’t have the same disparity, and the researchers speculated that was because men spend a greater amount of their time in a car sitting on the left.)

New Protection From the Hot Sun

On a related note, there’s some new research from the University of Kentucky College of Medicine that might go a long way in helping prevent skin cancer.

Researchers have been testing a cream that contains an extract of the herb forskolin on mice that have been genetically engineered without the ability to tan. Not only did the cream allow the mice to tan, but treated mice suffered only 5 percent the amount of sunburn and DNA damage and they developed fewer tumors than untreated mice. The forskolin cream stimulates the body’s melanocytes to make more protective natural pigments. It results in a natural, real tan. (*Nature* 06;443(7109):340-344)

The researchers can see no reason why it wouldn’t work on humans, but no one is sure yet since the cream has been tested only in animals thus far. I’ll keep an eye on any new research in this area and let you know as soon as something is announced. A forskolin cream would have many benefits over any of the products out there today. Not only would it allow fair-skinned individuals to tan, it would give natural protection against too much sun exposure without the need for constant reapplication.

Treatment Takes a Hot Turn

One other item I should mention deals with the treatment of skin cancers.

In the past I’ve discussed the use and availability of specially formulated creams that can be used safely and effectively to remove skin cancers. It appears that a common compound, capsaicin, may also have the ability to kill cancer cells.

Capsaicin, as you probably recall, is the compound found in hot chili peppers such as jalapeño and cayenne. Research from Nottingham University in the UK found capsaicin was very effective at killing cultures of human lung and pancreatic cancer cells. (*Biochem Biophys Res Commun* 07;354(1):50-55)

The study was so interesting because capsaicin was very selective at killing only cancer cells, leaving normal cells totally unharmed. Also, since capsaicin is already commonly found in the diet, making a product to address cancer should be much quicker and less costly than using some potentially dangerous compound.

The researchers suggested that skin cancer might be the first application for the product. After all, capsaicin has routinely been used topically for joint and muscle aches and pains and for psoriasis, without any problems.

Capsaicin is unique because it attacks the mitochondria or energy-generating components of cancer cells. In theory this would make it effective against all forms of cancer. And again, since it’s so plentiful and safety isn’t an issue it could be a real breakthrough—at a reasonable price. Pure capsaicin or hot pepper oil would be highly irritating to the skin, so further research is needed to determine the strength that’s both safe and effective.

Your Future Is In Your Hands

Anyone can tell you that there’s a difference between a person’s chronological age and their biological age. There are times you wake up after a poor night’s sleep and feel a hundred years old. Other times you’ll feel like a “spring chicken.”

Chronologic age has to do with the calendar, and there’s nothing you can do about it. Your biological age depends on your actions and lifestyle, though, and you certainly can do something about them. Day-to-day changes in the way you feel are the surest evidence of this but, as I’ve written before, there are other ways to monitor your true aging—signs such as your body’s glutathione levels and your overall flexibility.

TESTS DON'T TELL THE TALE

Question: Several of my friends have paid for genetic tests that claim to show their individual strengths and weaknesses. The test providers then recommend diets and supplements to correct or compensate for genetic differences. The lab tests and recommendations seem expensive to me. Are they accurate? Do you think it would be a good investment?

—JK
via e-mail

Answer: My personal opinion is that the tests currently available are a joke. There are several companies that check for gene "variants" and then recommend ways to compensate for these variants. The whole situation, however, is far more complicated than that. There are dozens, if not hundreds, of variables that can be linked to any given disease.

Several years ago I was introduced to an individual who claimed to have put all the pieces of the puzzle together when it came to achieving perfect health. It was all based on customizing a personal diet and supplements based on the patient's genetic makeup. From the beginning it sounded too good to be true, and that's how it turned out.



Genetic profiling is not sophisticated enough at this point to serve as the basis for your overall diet and supplement program. And, as I said earlier, there are many other factors involved such as physical and emotional stress, past and present drug use, sleep patterns, chemical exposure, digestive difficulties, hormonal fluctuations, amount of exercise, mental attitude, et cetera.

If you get a chance, take a look at the nutritional recommendations your friends have received. If they're like the programs I've seen, they're pretty basic, particularly if you already follow any of the recommendations I suggested and take a good multivitamin/mineral supplement.

Rather than waste your money on a battery of these tests, spend the time to plot out the health history of your immediate ancestors. Learning the health problems and causes of death of your parents, grandparents, aunts, and uncles will give you a better handle on your genetic weaknesses than any of the currently available tests can.

New research suggests that osteoarthritis may also be a sign of faster biological aging. Researchers at St. Thomas' Hospital in London examined 1,100 individuals, most of whom were female twins aged 30 to 79. X-rays were taken of their hands to determine if osteoarthritis was present, and white blood cells were examined to determine the length of their telomeres—strings of DNA that cap chromosomes and that have been shown to shorten with biological aging.

As in numerous studies before, this study confirmed that the older a person was, the shorter their telomeres were. What made this study unique was that the telomere lengths were also significantly shorter in the 160 individuals suffering from osteoarthritis in their hands—even after taking into account factors such as age, sex, smoking, and obesity.

All of those found to have osteoarthritis were over the age of 50, and the additional amount of telomere shortening was equivalent to that accrued over 11 years in healthy people. (*Ann Rheum Dis* 06;65:1444-1448)

This study didn't receive much publicity, but the results are truly amazing. They show that some of the same mechanisms associated with osteoarthritis, such as low-level chronic inflammation and oxidative stress, appear to also be strongly associated with aging. The researchers found a direct relationship between the degree of osteoarthritis in these individuals and their biological age.

I suspect that further research will show similar relationships between other common disease processes and aging. [Editor's note: Dr. Williams has written before about the connection between aging and chronic disease. For some simple tests you can use to assess aging in yourself or a loved one, visit the Subscriber Center of the Alternatives Web site, drdavidwilliams.com.]

From a practical standpoint, this study strongly suggests that if you want to slow the aging process, you can do it by preventing or at least minimizing problems such as osteoarthritis (rather than just addressing symptoms such as pain). In large part we know how to do this.

Put Out the Fires For Life

Chronic inflammation throughout the body can result when the ratio of omega-6 fatty acids to omega-3s gets out of balance. That's why increasing fish and flax oils in the diet can have such a dramatic impact on arthritis pain, as well as on dozens of other conditions throughout the body.

Antioxidants are crucial not only for joint health, but for overall health in general. Vitamins C and E are just two antioxidants that come to mind. Eating a wide variety of spices (such as turmeric or curry), colored vegetables, and fruits will help cover this base—as will supplements such as alpha lipoic acid. Variety seems to be the key, since new antioxidants are continually being uncovered.

For example, researchers at the National University of Singapore's biochemistry department recently informed me that their tests found dark soy sauce (not the lighter variety found in most restaurants here) exhibited antioxidant activity 150 times greater than vitamin C and 6 to 12 times higher than red wine.

Their study involved 24 healthy students with an average age of 23. Half the students were given a bowl of rice mixed with six teaspoons of dark soy sauce, and half were given rice with food coloring and salt. Samplings of their blood and urine were taken at intervals and tested for levels of free radical damage.

Between three and four hours after the meal, those eating the dark soy sauce had 20 percent less free radical damage compared to the other group. Additionally, those eating the soy sauce had a 50 percent increase in blood flow compared to the other group during that same time period.

The researchers cautioned that one shouldn't eat large quantities of the soy sauce, because its high salt content might cause an increase in blood pressure. None of the participants in this study experienced any such problem, though, and I thought it was interesting that researchers felt that the small amount of soy sauce used was the reason there wasn't a blood pressure problem. Six teaspoonfuls in a bowl of rice would be considered an enormous amount by most people in this country.

Keep in mind that this was dark soy sauce. If you haven't tried it, it's quite different than what most of us are used to. You can find it in most Asian markets. Based on the above research, it might be something you want to switch to.

Getting back to osteoarthritis, which I've written about numerous times, exercise is vitally important. Moving a joint through its full range of motion is the only way to adequately "feed" the cartilage and remove waste materials. I have no doubt this is just one of the many ways regular exercise helps keep the body young.

All the exercise in the world, though, won't compensate for a poor diet or one lacking in essential joint nutrients. For most people a good joint supplement might be the best solution. Personally, I like to get my joint-enhancing nutrients from slow-simmered broths made from the bones of beef, poultry, or lamb. But anything you do to reduce inflammation and shut down excess oxidative damage will have the same net effect—slowing down your aging. *[Editor's note: See Vol. 11, No. 16 for more about a joint mobility program. See Vol. 10, No. 23 for a bone broth recipe.]*

Prevention of a Devilish Sort

The recent television ads for a new vaccine against cervical cancer are pretty compelling, with healthy, attractive young women talking about how they want to stay that way. If you believe those ads, the path to their continued good health runs right through their doctor's office.

The vaccine, called Gardasil, reportedly protects against four of the main variants (types 6, 11, 16 and 18) of the human papilloma virus (HPV). These four types cause 90 percent of genital warts, and two of these strains are responsible for 70 percent of the cervical cancers. Gardasil doesn't treat or eliminate existing HPV infections; it's used as a preventive measure only.

Infections of HPV are spread only through unprotected sex, and are very common—particularly among teens and college-aged women who are sexually active. (The vaccine's manufacturer, Merck, tested their product on females age 9 to 26. HPV is the most common sexually transmitted disease among females in that age range.) In 90 percent of the cases the body's immune system clears the infection on its own without any further problems. Again, two of the strains targeted by this vaccine are thought to be responsible for the roughly 9,700 yearly cases of cervical cancer in this country. Out of that number of patients, about 3,700 will die.

Since Gardasil isn't for treatment, only prevention, it is thought that girls must receive the vaccination before they become sexually active. Several states are in discussions right now over the possibility of making the vaccine mandatory for all girls starting at about the 6th grade level. The Virginia legislature has just passed such a bill, and here in Texas governor Rick Perry bypassed the legislature altogether and issued a decree making the vaccine mandatory beginning with the 2008-09 school year. (This is a hot topic at the moment, so it's possible that other states will have enacted similar laws by the time you read this letter.)

The vaccine is administered in three shots over a six-month period at a cost of \$300-500 (not counting office visit or doctor's fees) and is reportedly effective for a period of five years (which I would assume means all of these girls/women would need to repeat the vaccination every five years).

I'm sure there will be a lot of debate over these vaccination programs as there has been in the past with others. I certainly have some concerns about the vaccinations in general, in addition to making them legally required in order to attend school.

(Vaccines continued on page 167)



NEWS TO USE FROM AROUND THE WORLD

Croc Engulfs Three-Year-Old's Foot

Our youngest child just turned 3 a couple of months ago. His vocabulary seems to be growing exponentially, but mine seems to have contracted to only a couple words—primarily the word “no.” The world is his toy box, and he wants everything he sees. A few weeks ago we were in a clothing store, where he saw those funny-looking shoes called Crocs and wanted a bright blue pair.

After saying “no” for the thousandth time, I broke down and bought him a pair. I guess it was money well spent (they cost \$29.95). He wears them constantly, without socks I might add. He wears them around the house, outside in freezing weather, and even to bed.

What I first thought to be a simple shoe fad has turned out to be a solution for many people with problem feet. I’ve seen reports that Crocs can be very helpful in providing relief for individuals with plantar fasciitis—inflammation of the fibrous band that connects the heel bone to the base of the toes. The condition generally starts like a stone bruise on the heel and the pain then spreads along the bottom of the foot. It’s most often treated medically with steroid injections combined with stretching exercises, and oftentimes orthotics (arch supports) are added. Many people now report that Crocs are a godsend in these cases.

Crocs are also perfect shoes following the removal of bunions (bunionectomies) or other types of foot surgery. They fit loosely enough that they can be worn with bandages still on the feet.

Crocs are made from a non-porous resin, so they won’t attract and hold bacteria—which can be very important for someone susceptible to infections. This feature makes them great for someone with diabetic ulcerations and/or poor circulation.

Their design allows for plenty of room in the toe area, a built-in support for the heel, and a rear strap that helps hold the shoe on. They may look strange, but they are very comfortable, and if you have foot problems they are definitely worth a second look. A lot of shoe stores are starting to carry Crocs now, and you can also order them online at www.crocs.com. The company has added several styles, but the most popular one for foot problems continues to be the “beach” model. Fortunately, in case you’re not partial to bright blue the way my son is, they do come in a variety of colors. (He’s since added a pair of red ones to his wardrobe. Besides buying additional pairs for my immediate family, I’m surprising my Dad and Mom with some.)

Bucking Conventional Wisdom

Some recommendations seem to change every few years. That appears to be the case with wound healing.

For the longest time it was taught that wounds heal better if they’re exposed to the air once they’ve been cleaned and the bleeding has stopped. New research shows differently.

The latest finding supports the idea that keeping a wound moist and covered allows it to heal more quickly with less chance of infection. Apparently, the local blood vessels regenerate faster and the number of cells known to cause inflammation also decrease in number if wounds are not allowed to dry out. The research indicates that a wound should be kept moist for at least five days.

Companies selling antibiotic ointments and creams may try to capitalize on these findings. Keep in mind, however, that while these ointments may help keep the wound moist, they also increase swelling in the tissue and can cause a localized allergic reaction—canceling out any positive effects.

Researchers have found that one of the best and most effective methods of keeping a wound safely moist is by applying Vaseline. It’s inexpensive, it’s readily available, and it works.

As I’ve mentioned numerous times in the past, honey is also a very effective wound dressing. Put enough on the bandage to get it moist, then apply it right to the skin. Change the dressing two or three times a day, as you would with any other bandage.

Getting the Full Benefits of Tea

BERLIN, GERMANY—The benefits of tea are pretty well-known by now, but a study conducted at the Charité Hospital, part of the University of Berlin, shows that adding milk to your tea can cut some of its benefits to nearly zero. Researchers there found that while black tea improved blood flow, adding milk to the brew eliminated that benefit completely. (*Eur Heart J* 07; doi:10.1093/eurheartj/ehl442 e-pub ahead of print)

In the study, 16 women were given either 500 mL (roughly a pint) of black tea or the same amount of hot water to drink. Half of the tea drinkers had milk added to their drink, and the other half took theirs straight. Two hours after the subjects drank the straight tea, blood flow increased noticeably in their forearms. There was no effect on blood flow from either the hot water or the tea-milk combination.

Black tea can improve blood pressure by relaxing blood vessels. Tests in rats showed that the tea works by increasing the production of nitric oxide in the endothelial lining of arteries.

NEWS TO USE (CONTINUED)

One of tea's active components is a group of molecules called catechins. (The most well-known of these is EGCG, or epigallocatechin gallate.) Researchers in this study found that the catechins were bound up by casein, one of the proteins in milk. Some earlier studies hadn't shown much interaction between casein and catechins, but this was the first study to look at actual physical effects.

And keep in mind that it's not just milk that can negate the benefits of tea. Non-dairy creamer and soy

milk lessen the insulin-enhancing effects of EGCG. Adding less than an ounce (5 grams) of 2-percent milk dropped the activity by one-third, and when milk was mixed 50-50 with tea the positive effect was reduced by 90 percent. Adding lemon juice, by the way, has no effect on the tea's benefits.

We continue to learn more and more ways that tea consumption can protect and improve our health. To take advantage of all these benefits, make sure you drink your tea without any form of milk or creamers.

(Vaccines continued from page 165)

The tests for the vaccine only lasted four years, so we obviously don't know what the long-term effects might be—if any. Even the FDA, which approved the vaccine, expressed concern that it hadn't been tested to determine if it **might** cause cancer, impair future fertility or reproductive capacity, or cause harm to fetuses already developing at the time of the mother's vaccination. The 9-year-old girls in the study haven't even reached the age where they are likely to become pregnant.

In the clinical trials, over 3 percent of the infants being breast-fed by mothers using the vaccine experienced serious side effects, and three times as many infants experienced respiratory illness compared to those of mothers receiving a placebo.

In summary, I think it will take a lot longer than four years to learn if the vaccine is safe or not. In the meantime, Merck will get a free ride by using hundreds of thousands of young women as guinea pigs—and pocket millions of dollars in the process.

Even though I'm not naïve enough to believe it's achievable, it's worth mentioning that HPV infections are 100 percent preventable by using condoms.

Legislated Profit

We may be seeing another trend in marketing by pharmaceutical companies: having states pass laws to make various vaccines, screening tests, and treatments mandatory. This is probably one of slickest marketing tools ever.

There have been numerous instances of this tactic over the years, particularly ones aimed at schoolchildren. Just this year thousands of children were sent home from school in Maryland because their parents didn't provide proof of vaccinations against chicken pox and hepatitis B—both of which have been added to the required regimen in many jurisdictions.

Another example occurred last year in New Jersey, where the governor signed legislation requiring health care professionals who provide prenatal care to educate women and their families about postpartum depression (PPD) and requiring health care professionals who provide postnatal care to screen new mothers for the disorder. In a press release, it was stated that 80 percent of women experience some degree of depression following childbirth, and one in eight of these (11,000 to 16,000 in New Jersey alone) develop what is clinically defined as postpartum depression (PPD).

As you might guess, the "accepted" treatment for PPD is counseling and, of course, drug therapy with antidepressants. It's heartbreaking to think how many new mothers will follow the miracle of childbirth (and starting a new family) with a lifelong dependence on an antidepressant.

PPD is a very real problem, but it definitely doesn't stem from a drug deficiency. The added nutritional and hormonal stress of pregnancy often leaves the mother's body chemistry totally out of balance following childbirth. One of the most common problems seems to stem from depletion of the adrenal (or stress) glands.

If you recall, hormones from the adrenal glands work in conjunction with hormones from the pancreas to help regulate blood sugar. They also help the kidneys regulate mineral levels in the body. Physical or mental stress, poor diet (excess sugar or carbohydrates), skipping meals, alcohol, and smoking are some of the primary causes of weakened adrenals. During and immediately before pregnancy a poor diet, particularly consuming too much sugar or high-carbohydrate meals, will quickly weaken the adrenals.

As you've probably noticed, during the first three months of pregnancy many women experience a great deal of fatigue and a total lack of energy. Beginning sometime during the second trimester they oftentimes

get a huge burst of energy and heightened sense of well-being. These women will say things like, "This is the best I've ever felt in my life." And this newfound energy remains with them until they give birth, when all of the sudden it feels like the whole world collapses around them (PPD). There's a logical reason for these changes, which also provides a basis for fixing the problem.

Women who have weak adrenals at the start of the pregnancy are subjected to additional stress and nutritional problems in the beginning. During the second trimester the child's adrenal glands begin to develop, along with the thyroid, pituitary, and other glands. And since the mother and child share a circulatory system she begins to benefit from the baby's hormones. In effect, she begins to "feed off" the baby. She begins to experience more energy and that overall sense of well-being. It couldn't get any better. Her body has discovered a fresh new source of everything she's been missing.

But when the baby is born, the mother is abruptly cut off from her newfound lifeline. Within a day or two of giving birth, the mother can go from the highest high to the lowest low and never know what hit her. No one offers her an explanation. If anything, she might be told it's normal to experience the depression and fatigue and it's something she just needs to work through—and maybe some antidepressants might help.

The underlying problem, however, needs to be corrected. The adrenal glands (and often the thyroid and pituitary glands) must be given nutritional support. Sugar has to be eliminated. Additional minerals, B vitamins, and essential fatty acids (predominantly omega-3s) must be added to the diet. I've seen dramatic changes in just a *matter* of days through proper nutritional support, particularly using glandular supplements for the adrenal, thyroid, and pituitary glands (as I've described in the past). The problem isn't correctable with drugs.

Before leaving this topic, I want to mention that the child must not be forgotten. For months during a critical *development* stage the growing baby's hormonal system has been under additional stress. While babies have the potential to rebound rather quickly, they are often

born with weakened adrenal glands and can experience major problems with blood sugar control. These are the same kids who are practically addicted to sugar, and the same ones who are later diagnosed with attention deficit disorder. They need the same treatment as the mother: nutritional intervention, not drugs.

Money Makes the World Go 'Round

I guess I got sidetracked from my original topic, but whenever I see legislated requirements for medical screenings, vaccinations, and the like, I think a bit of healthy skepticism is in order—particularly when it comes to our children.

I think it's also relevant to keep in mind that these efforts are not necessarily altruistic actions on the part of the pharmaceutical companies. They are undoubtedly fueled by the promise of future profits.

My latest count shows that 18 states are now debating the requiring of Gardasil vaccination for schoolgirls. Not surprisingly, Merck is funneling money through an organization called Women in Government, an advocacy group made up of female state legislators from all over the country. Many of the bills currently being considered have been introduced by members of Women in Government. A top official from Merck's vaccine division also sits on the Women in Government business council.

Merck has declined to specify just how much money it has spent on lobbyists or donated to Women in Government, but I would suspect the amount is substantial. After all, one drug industry analyst I spoke with projected Gardasil sales of at least \$1 billion a year *and billions more if states legislate to require the vaccine*. If you have daughters or granddaughters who are of the age under discussion here, it would be worth your while to check with your state legislators and see what their take is on the matter.

Take care,

Dr. David Williams

If you have questions or comments for Dr. Williams, please send them to the mail

or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

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Dr. David G. Williams

Busting an Iron-Clad Myth

The times they are a-changing"...again.

Over the past few years a huge change has taken place in the way medical studies are conducted. For the longest time there was a great disparity between the number of women involved in studies

and the number of men included in similar studies. For decades it seems like most medical studies focused on men. During the latter part of the 20th century, the women's rights movement and demand for equality (along with a growing awareness that women aren't just small men) changed all of that, which was a good thing. In one aspect, however, it appears the pendulum may have swung too far. To a large extent, particularly when it comes to prevention, men may be getting the short end of the stick.

The latest figures available (from 2004) show that the average life expectancy in this country is 77.9 years. White females averaged around 80.5 years, while white males averaged about 75.4 years—fully five years less. (For blacks, both male and female individuals average about five years less than whites.)

Over decades, there seems to be a consistent five-year difference in life expectancy between males and females. It's been established that part of the difference stems from more risky behavior on the part of men. But when you take a closer look, it becomes apparent that other factors contribute as well. One of these is the trend I talked about earlier: the increased emphasis being placed on women's health.

Issues such as breast cancer have taken center stage, while corresponding men's issues such as prostate cancer receive relatively little attention. You just don't see any colored ribbons or "run for the cure" events to highlight the issue of prostate cancer. In 1991 Congress even created the Office on Women's Health within the US

Department of Health and Human Services. No such office yet exists for men.

Also, there really isn't any medical specialty dedicated to male health. Women often discover any health problems or concerns through visits to a gynecologist. Studies have shown that periodic examinations by obstetricians and, particularly, gynecologists often reveal the beginning signs of high blood pressure, diabetes, cancer, and heart disease. These are the same leading causes of death in men, ones that often go undiagnosed—at least until serious damage has been done. Men have a well-known tendency to shun regular checkups and go to a doctor only once a problem has progressed to a point where it simply becomes too serious to ignore.

Find the Cause, Fix the Problem

Keep in mind that, as important as it is, the diagnosis of a problem is only the first step. Once an accurate diagnosis has been made, the form of treatment one chooses can determine his or her ultimate longevity. Treating a symptom without addressing the underlying cause has been the Achilles' heel of modern medicine. Masking the symptoms doesn't make a problem go away. It only leads to additional and oftentimes more serious problems down the road. Having said all of this, it's a no-brainer that taking steps to prevent health problems is the ultimate solution—and prevention is where our health care system falls short with both men and women.



In This Issue

Busting an Iron-Clad Myth1

You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on. — Benjamin Franklin

After taking a closer look at the difference in mortality between men and women, and factoring out accidents from risky behavior, some researchers now believe there is a simple explanation for the discrepancy. If they're correct, it may give us an inexpensive, effective foundation for preventing a long list of diseases, as well as a possible way to reverse many of these problems.

The basic premise is that excess iron is the underlying culprit. Before anyone gets the impression that iron is harmful and dangerous, it's important to realize that iron is essential for life. But I guess you could say it's a double-edged sword. I won't get into too much detail about this, but a little explanation may help you understand why it can be important to control iron levels in your body.

A Little Is Good, But More Isn't Better

Iron is an essential part of hemoglobin, the molecule that carries oxygen in your bloodstream. This compound consists of two parts: the heme portion and the globin. The heme portion contains iron, which grabs onto oxygen as the blood passes through the lungs and then releases oxygen later to the cells. (The globin portion of hemoglobin is a protein that protects the heme.)

Atoms of iron tend to lose or gain electrons rather easily. This characteristic is what makes the metal necessary but dangerous. Iron is constantly gaining and losing electrons as it moves oxygen around, and, in the process, highly reactive free radicals are formed. Excess iron—or probably more accurately the inability of your body to stop the oxidation of iron (i.e., free radical formation)—is the actual cause of problems. In simple terms, more iron results in more free radicals, leading to more damage, causing more disease.

The dangers of an acute overdose of iron are well-known. Early signs are diarrhea and the vomiting of blood, from damage to the GI tract. Excess iron also damages mitochondria in individual cells, leading to potentially fatal liver damage. (This is the primary reason iron supplements now come packaged in child-proof containers or in single-dose packaging such as blister-packs. At one time, iron was the number-

one cause of poisoning in children under age 6.) It's only relatively recently that we have a wider awareness of the problem of chronic overexposure.

Your Body's Iron Cycle

Most of the iron absorbed by your body is utilized in the production of red blood cells, more specifically the hemoglobin molecules in red blood cells. In fact, of the 3 to 4 grams of iron in your body, roughly 2.5 grams is contained in the hemoglobin of red blood cells. Another 400 mg is used in various cells, such as muscle cells (myoglobin), to store oxygen and perform other functions.

In the early part of life, the volume of red blood cells is constantly expanding, and it's rare to have an excess of iron. If you notice children who are pale, sickly, fatigued, and/or experience cold hands and feet, there's a good chance they are iron-deficient or anemic. All the conditions that are related to a lack of oxygen during the childhood years could easily be symptoms of an iron deficiency. I suspect that many cases of attention deficit disorder (ADD) are iron-related. It's easy to see how concentration would be difficult without adequate oxygen-carrying capacity.

Under normal circumstances, as we mature our red blood cell volume stabilizes and our need for iron goes down. And while our need may drop, our consumption generally remains the same—which can lead to excessive iron stores. Getting back to the difference between the sexes, in females this typically isn't a problem.

Each month during the menstrual cycle, a woman loses somewhere between 20 and 80 mL of blood. This results in an iron loss of 11 to 22 mg of iron. This is nature's way of temporarily preventing an iron excess in females. Granted, along with the temporary iron loss, it's not unusual for women to experience more fatigue, brain fog, and weakness. The trade-off, however, appears to be linked to the extra 5 years of life they enjoy over men. (Plus they have the added benefit of always having a legitimate excuse for memory failure and being "too tired"...just kidding, Sweetheart.)



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(Keep in mind, as you read this, that several pharmaceutical companies are just starting to promote the use of prescription hormones to eliminate menstrual periods in women. The sales pitch claims women can now choose whether or not they want to have a period. By stopping their periods, pharmaceutical companies claim, women can *safely* avoid all the hassles and side effects like cramping, fluid retention, and mood swings. They also claim there are no known side effects or harm caused. I have serious doubts about that. I think any action that significantly increases your risk of infections, heart disease, diabetes, cancer, neurodegenerative disorders like Alzheimer's and Parkinson's, and/or shortens your life by an average of five years is very dangerous.)

Men's Greater Risk

Men obviously don't experience this monthly blood (and iron) loss. The male body doesn't have any mechanism to routinely remove excess iron. As a result, men quickly begin to accumulate additional iron stores.

Studies have shown that iron levels begin to rise very sharply in men toward the end of their adolescent growth spurt in their late teens, and reach maximum levels between the ages of 30 and 39. Iron levels then remain fairly constant until about age 70, when they begin to decline somewhat. The situation in women is much different.

The iron level in women remains low until after about age 50. At that point it shoots up rapidly, much as in males 30 years younger. Even so, for most of her life a woman's maximum iron level is only about two-thirds that of a man of comparable age. By about age 90 the iron levels of white men and women begin to converge.

The changes in iron levels of Hispanic males and females follows pretty much the same pattern as in white males and females. Blacks pretty much follow the same pattern, but the overall rise is greater for both black men and women when compared to the other races. Also, once iron levels level out in black males, they don't begin the characteristic decline like the other races. One study found that overall iron levels were approximately 7 to 8 percent greater for blacks than for whites and Hispanics, and these differences remained throughout the second half of life. This may help explain their increased risk of diabetes, cardiovascular disease, et cetera, and their reduced life expectancy compared to whites and Hispanics. (*Am Heart J* 00;140:98-104)

When you look at the data above, it's not hard to see that iron levels seem to track the same pattern seen with the incidence of cardiovascular disease, diabetes, and many cancers being experienced in our society.

Metal, not Menopause

For the longest time, it was thought that estrogen provided women an extra measure of protection against cardiovascular disease. Their risk is relatively low compared to men until they reach menopause, roughly around age 50. Now research discounts the hormone connection, and gives additional support to the idea that lower iron levels are involved. (*N Engl J Med* 03;348(19):1835-1837) (*Arterioscler Thromb* 94;14:857-861)

This isn't a new theory. A pathologist named Jerome Sullivan noticed the link between the different iron levels in the sexes and their heart attack rates over 25 years ago. From his personal observations, and the work of others, he proposed that excess iron explained the age-related delay in the incidence of heart attacks in women until after menopause. In 1981, he suggested that regular phlebotomy (blood removal) could be used to test the idea and, if proven correct, be used as a preventive therapy. (*Lancet* 81;1(8233):1293-1294) (*Circulation* 92;86:1036-1037)

Not many people took notice of Sullivan's proposed therapy at the time. Since then, however, several studies have shown he was on the right track.

Drawing Blood, Drawing Conclusions

Phlebotomy of healthy males has been shown to increase levels of the "good" HDL cholesterol, apolipoprotein A, cysteine, nitric oxide, and retinal. It also makes the LDL form of cholesterol less susceptible to oxidation and decreases the levels of oxidized fats. All of these factors have been shown to lower the risk of cardiovascular disease, heart attack, and stroke.

Phlebotomies have also proved to be helpful in controlling blood sugar in diabetic patients. Reducing iron levels in diabetics has been shown to reduce insulin resistance and decrease levels of glucose, triglycerides, fibrinogen, and LDL cholesterol while elevating HDL cholesterol. (*Diabetes* 02;51:1000-1004) (*Ann N Y Acad Sci* 02;976:342-351) (*Metabolism* 94;43:614-620)

There are other diseases where reducing iron levels may be beneficial. For example, higher iron levels also increase the risk of certain cancers. (*Int J Cancer* 94;56:364-369) (*J Natl Cancer Inst* 94;86:455-460)

It's well established that cancer cells thrive on iron. One of the best examples is leukemia cells. They contain more than a thousand times more iron than normal cells, one of the highest levels among cancer cells.

Surprisingly, however, not much research has been focused in this direction. Studying the relationship between iron levels and various diseases presents some special problems. Normally one could compare a

specific population or society known to have low levels of a mineral or nutrient to another that has normal or higher levels. For example, if we wanted to see if a higher consumption of fish oil in the diet was beneficial, we could compare a segment of the population that abstained from fish to that of the Japanese culture, which regularly consumes fish. In the case of iron, however, there is no naturally occurring population or society with across-the-board lower iron levels.

Using dietary surveys isn't of much use, for two reasons. First, determining iron intake is difficult because so many processed foods are now fortified with iron. Second, absorption rates vary widely from person to person. The only alternative is clinical trials that involve reducing iron levels through phlebotomy, iron chelation, or strict diets—and each of these would have to be performed for years to accurately determine the effects of excess iron.

Possibly the biggest problem, once again, involves money. Nobody wants to fund such long-term studies when there is little, if any, chance of recouping their money through patents or product sales.

Measuring Iron Levels

I'm convinced at this point that one should take action now, and not wait another 10, 15, or 20 years hoping additional research will be done. This is another situation where there's no downside, and the potential long-term benefits could be five or more additional years of life and the prevention of several severely debilitating diseases.

Before doing anything, however, it would be wise to know your current iron level. This can easily be done with a standard blood test known as the serum ferritin determination.

As iron increases in the body, cells respond by producing more of the protein ferritin, which binds and stores iron to help limit its toxic effects. Ferritin is effective, but only within certain limits. As the level of iron continues to increase, ferritin's ability to detoxify it begins to diminish. Under most circumstances, your ferritin level is a very good indicator of iron stores within the body. The higher the ferritin level, the higher your iron stores.

(Ferritin levels are easy to interpret. It's always nice to have the guidance of a physician, though, because ferritin can increase due to a few other things as well: during certain disease processes, including malignancy and infections; and from tissue damage that can occur following trauma or surgery. In these circumstances, ferritin levels may be elevated without one having excess iron stores, and additional tests may be necessary.)

The accepted range for ferritin varies a great deal. Most laboratories consider anything between 15 and 300 nanograms per milliliter (ng/mL) to be "normal." That represents a 20-fold spread, which is greater than any other blood measurement.

Studies have shown that ferritin levels average around 150 ng/mL in middle-aged men and 100 ng/mL for women. These are the average values taken from what are considered normal, healthy individuals, but keep in mind that the damage from chronic exposure to excess iron isn't always evident until years, if not decades, later. In other words, younger individuals may still appear healthy, even if they have toxic levels of iron. More than likely they won't experience the ill effects of chronic excess iron exposure for several years or maybe even decades. (*Am Heart J* 00;140:98-104) (*Am Heart J* 00;139:337-345)

The threshold level at which the risk for disease begins to increase hasn't yet been defined. However, from the research I've studied, the optimal ferritin level appears to be somewhere in the range of 15 to 50 ng/mL. A normal upper limit of 50 ng/mL would be in line with that of children and premenopausal women. No research has shown that levels over 50 ng/mL are physiologically necessary or even beneficial. (*Circulation* 97;96:3300-3307)

Reducing Iron Levels

What we're really talking about is minimizing the damage caused by the oxidation of iron. The first step that comes to mind is obviously to reduce the amount of iron in the body. But remember that most of the damage occurs from chronic exposure to iron. In other words, the greatest benefits from reducing iron levels occur when it is done earlier in life. A study just released by Dr. Leo Zacharski illustrates this point.

Dr. Zacharski is one of the leading researchers and proponents of iron reduction therapy. He just published the results of a six-year Veterans Affairs study involving 1,277 men and postmenopausal women, ages 43 to 87, suffering from peripheral arterial disease—a known risk factor for future heart attack and stroke. (*JAMA* 07;297(6):603-610)

Part of the group served as controls and had no reduction in their iron levels. The other group underwent iron reduction by phlebotomy (defined volumes of blood were removed at six-month intervals). Blood levels were calculated to avoid iron deficiency.

At the end of the study the researchers found that for those individuals ages 43 to 61, lowering iron levels could have a dramatic effect on their mortality. Compared to the controls, the iron-reduction group experienced 54

percent fewer deaths from all causes and 57 percent fewer deaths occurring after non-fatal heart attacks and strokes. It was also noted that removing iron provided *smokers* a noticeable degree of protection against the negative effects of tobacco.

This latest study supports the idea that many of the problems associated with excessive iron develop over a period of years. This is typical of problems like cardiovascular disease, type 2 diabetes, and many forms of cancer. (*JAMA* 04;291:711-717)

This isn't to say that if you're over 60 you shouldn't take steps to reduce your iron stores. Continued exposure can only make problems worse and make it more difficult to turn a health situation around.

There are steps everyone should take to minimize the damage from excess iron, and ways to safely and effectively reduce the buildup of iron in your cells. But before you do anything to reduce iron levels, it's important, as I mentioned earlier, to know the iron level in your body.

Public Service Gives Personal Benefit

One of the quickest, safest and least expensive ways to lower iron stores is through regular blood donation. It's phlebotomy with a bonus. You help yourself and others at the same time...one unit of blood can save the lives of three people. After donation, the blood is separated into its three main components—red cells, platelets, and plasma—and the three parts are often given to three different people.

(As an aside, you may remember that I wrote in *Alternatives* Vol. 11, No. 20 about the dangers of blood transfusion. As I said at the time, though, in some circumstances people do need blood—and any health concerns are limited to the recipient, not the donor.)

Men have about 12 pints of blood and women 10. Donating one unit (or pint) reduces your blood volume by only 10 percent or less. Granted, it does temporarily reduce your oxygen-carrying capacity by the same percent, but your body automatically increases the heart rate during exertion to compensate. Your body also replaces the lost fluid volume within 48 hours and the lost hemoglobin is replaced within a week to 10 days.

In the above VA study, one unit of blood was donated every six months and cardiovascular benefits were seen in younger (ages 43 to 61) men and women. Earlier studies, however, have only shown cardiovascular benefits in men and not in postmenopausal women (or in smokers) who donate blood. One Finnish study found that men who donated a single unit of blood within the preceding three-year period experienced a 30 percent reduced

risk for cardiovascular events such as heart attack, bypass surgery, and stroke compared to non-donors. (*Brit Med J* 97;(314):793-794)

There are concerns with many of these earlier studies, because they are observational studies. They don't take into account the possibility that blood donors might be more health-conscious, exercise more, et cetera, and may already have a lower risk of cardiovascular disease than non-donors.

I think blood donation in itself is a wonderful act and, based on the research, I think most non-smoking males younger than age 60 could reduce their risk of cardiovascular events by donating a unit at least once or twice a year. This would be particularly true of black males and possibly even postmenopausal black women.

And although the research doesn't yet support it, I suspect that even older males could benefit in other ways by donating a unit of blood per year. (As a comparison, the blood a woman loses during her menstrual cycles works out to about one pint or unit of blood a year. There's also very significant blood loss during pregnancy and childbirth.)

Donating one unit of blood (a pint or about 500 mL) will lower the ferritin level by about 50 ng/mL, and ferritin will stay below the pre-donation level for up to six months. The iron lost from donating two or three units a year is roughly the same amount of excess iron an individual absorbs each year.

I think that in the not-too-distant future we'll see routine blood donation or phlebotomy being used to specifically reduce iron storage and accumulation. It becomes a win/win situation for everyone. The donor increases the quality and length of their life. The recipient receives the gift of life. And our society sees an overall reduction in health care costs.

I'm aware that certain individuals are not able to donate blood. In recent years, blood collection organizations such as the American Red Cross have become increasingly strict about who can and who can't donate. The use of certain medications, current illness, and recent travel to particular areas are all reasons for deferral.

In that case, phlebotomy is a good option. Most physicians and other practitioners can perform the procedure right in their office.

Other Choices for Iron Reduction

There are other direct methods of removing iron stores from the body, but they are more expensive than blood donation.

Intravenous administration of the mineral chelator EDTA is one method. It requires numerous treatments to be effective. Chelation therapy is usually not covered by insurance, and can cost as much as \$4,000 to \$5,000. (Over the years there have been a number of oral EDTA products on the market. I don't think they're particularly effective. If you choose EDTA chelation, IV administration is the way to go.)

There's also the prescription drug desferrioxamine (also known as deferoxamine), but it also comes with a cost and potential side effects. And convincing your doctor to order either phlebotomy or the drug can be a challenge, especially if your ferritin levels are within the accepted "normal" range.

There's a little-known natural chelating product that may one day replace both EDTA and desferrioxamine. It's safe, available over the counter, and very inexpensive. It's practically unheard of in this country, but it has been used extensively in Japan for years.

IP6 is an excellent natural product normally used to boost *immune function*—but it also works very well at chelating iron. The primary ingredient is phytic acid, also known as inositol hexaphosphate. The compound is a natural supplement extracted from rice bran. The sole worldwide manufacturer of IP6 is Tsuno Food Industrial Company of Wakayama, Japan. The product is sold under various labels in this country, but regardless of the brand it still comes from this same company—so this is one product you can shop for on the basis of price. In other words, buy the least expensive brand.

A month's supply normally sells for less than \$10. Like cilantro, IP6 is another "poor man's chelation therapy." [Editor's note: For a summary of Dr. Williams' other recommendations on chelation over the years, visit the Alternatives Subscriber Center at www.drdauidwilliams.com.] Jarrow and Source Naturals are just a couple of the companies that market IP6 under their label. It will be very easy to find IP6 at your local health food store or from a mail order or Internet supplier.

IP6 enters the bloodstream and chelates various minerals, including iron, copper (another active producer of free radicals), calcium, and heavy metals like lead, cadmium, and mercury. The minerals and heavy metals are then excreted from the body through the urinary tract. IP6 doesn't remove necessary electrolytes—minerals like sodium, potassium, and magnesium—so you don't have to be concerned about stressing or causing damage to the heart muscle.

The compound is extremely safe and actually found naturally in practically every cell in the body. Being a

chelating agent, however, it should not be taken on a continuous basis as it could lead to iron-deficiency anemia or a calcium deficiency. (*J Agric Food Chem* 99;47(11):4714–4717) (*Lancet* 87;2(8560):664–666)

The generally recommended dosage is 1,000 to 2,000 mg of IP6 a day for 30 to 60 days. It should be taken between meals on an empty stomach.

(Pregnant women, children, and anyone who's anemic should not take the supplement. Although it's not 100 percent accurate, one of the tell-tale signs of anemia is usually cold hands and feet. These individuals obviously need higher amounts of iron and/or calcium rather than having it removed from their system.)

I consider one month's use of IP6 each year an excellent way to help cleanse the body of iron, toxic metals, and calcium deposits.

Another little known use for IP6 has to do with kidney stones. Research also suggests its calcium removal properties can help both prevent and remove kidney stones. And it's possible that it may be beneficial at removing calcium deposits in blood vessels. Hopefully we'll see more research in that area in the near future. (*Scand J Urol Nephrol* 00;34(3):162–164) [Editor's note: See Vol. 3, No. 7 for more on the use of phytic acid to fight kidney stones.]

The germ in whole grain and whole grain flours contains phytic acid, the same iron-binding compound in the product IP6. Unfortunately, however, when yeast is added to the flour and fermented (which allows the bread to rise), the phytic acid is destroyed. The best breads to reduce iron levels are those prepared without yeast, also referred to as unleavened, unraised, or flat breads.

Even a Blind Pig Can Find an Acorn

All of the techniques and procedures I've mentioned thus far are utilized to specifically lower iron levels. When you take a closer look at the latest longevity "breakthroughs" and "anti-aging" suggestions, many of their benefits can be linked to their effects on iron levels or activity.

Aspirin is used by millions of people on a *daily basis* in an attempt to prevent everything from heart problems to various forms of cancer. Many of aspirin's benefits have been attributed to its anti-inflammatory actions. After taking a closer look at the research, I found that one of the effects of aspirin is to increase ferritin production. As you recall, ferritin attaches to extra iron for storage and helps limit its toxic effects. Aspirin's ability to produce additional ferritin helps limit the damage it causes—which, in turn, lessens the risk of cardiovascular disease and cancer. (*Circ Res* 98;82(9):1016–1020)

Aspirin also causes bleeding in the gastrointestinal tract. I suspect this chronic bleeding and subsequent iron loss, which often goes undetected, accounts for many of aspirin's reported benefits. Personally, I don't relish the thought of self-induced internal bleeding, and I think that the side effects of aspirin—including retinal bleeding and asthma—very often outweigh its benefits. There are better and safer methods of controlling inflammation and reducing iron stores.

More Goodness From the Grape

Another anti-aging tool I've discussed and recommended is the extract from grape skins and grapevines called resveratrol. Recent research has suggested that, to a large degree, resveratrol produces the same benefits as calorie-restricted diets—the only proven method to slow the aging process. Both highly calorie-restricted diets and resveratrol influence iron levels and/or activity.

To date, calorie restriction has been studied extensively only in fruit flies and mice, and to a lesser degree in monkeys. In every case, however, it has been found that the amount of food consumed by these insects and animals was directly related to the level of iron in their tissues. The rate of age-related iron accumulation has been directly related to the life span of these species. And much like in humans, the accumulation of iron didn't occur until after the animals reached their mature state.

Resveratrol can provide the benefits of a very low-calorie diet without the hassle. It may do so by controlling the activity of iron. Although resveratrol doesn't chelate iron or reduce iron stores, *resveratrol has been shown to be one of the strongest antioxidants ever discovered for protecting against iron-induced free radicals.* (*Free Radic Res* 00;33(1):105–114)

Red wine, as you know, has also been associated with having anti-aging properties. This is partly due to its resveratrol content. To get the amount of resveratrol shown to be effective, 25 mg daily, you'd need to drink several glasses of red wine. A better solution may be to try a resveratrol supplement, such as Resvert from Supplement Spot Nutrients at www.supplementspot.com or 877-205-0040; Longevinex from Resveratrol Partners at www.longevinex.com or 866-405-4000; or Resveravine from Mountain Home Nutritionals, www.drdaavidwilliams.com or 800-888-1415.

Wine also contains various tannins and pigments (like the bioflavonoid quercetin) that bind and neutralize iron. It's these iron-binding pigments that contribute to many of the health benefits of other foods and drinks as well.

Coffee also contains iron-binding pigments that can reduce iron absorption by as much as 35 percent. And the bioflavonoid in green tea called catechin has been shown to reduce iron absorption by over 60 percent. (*Hum Nutr Appl Nutr* 82; 36(2):116–123)

It's often the same pigments or bioflavonoids that give food their color that also help control iron toxicity and improve our overall health and longevity. This supports the idea of having a varied diet that includes lots of different colorful vegetables, fruits, berries, et cetera.

Yet More Choices

Curcumin, a component of turmeric and one of the primary ingredients in curry powder, just also happens to be a chelator of iron (and copper). This may provide another clue as to why Indians have such a low incidence of Alzheimer's disease. I still feel strongly that turmeric is one of the best health bargains of all time. For just pennies a day it protects against dozens of diseases—and one of the ways it does so is by removing excess iron stores. As little as 250 to 500 mg per day is enough to give you the benefits. (*J Alzheimers Dis* 04;6(4):367–377)

Recently, the Linus Pauling Institute studied the effects of lipoic acid on iron. Their animal studies confirmed what numerous other researchers have found in the past. Older rats had a 50 percent increase in total iron content in their brain cortex when compared to younger rats. In addition to the age-related iron accumulation, the older rats also had 27 percent less vitamin C and an increase in oxidized glutathione.

They supplemented both young and old rats with high levels of lipoic acid for two weeks (the equivalent of a 150-pound person taking 3,400 mg a day). The iron levels in the young rats didn't change, but the levels in the old rats fell to the same levels found in young rats. There was also a 30 percent increase in vitamin C levels in the older rats, along with an increase in reduced glutathione.

Watch for Iron Boosters

Speaking of vitamin C, it's important to remember it significantly increases iron absorption. In fact, orange juice, due to its vitamin C content, increases iron absorption by as much as 85 percent. I wouldn't, however, avoid foods high in vitamin C or vitamin C supplements, since the known benefits far outweigh any possible increase in iron levels. You might want to avoid drinking orange juice or taking the supplement with heavy meat meals.

Pure alcohol increases iron absorption by a factor of three (which may help explain why Geritol, once promoted as being good for "iron-poor blood," is about

12 percent alcohol). Milk and beer have no effect. And wine increases iron absorption only slightly, probably due to the high concentration of tannins and iron-binding pigments we discussed earlier. Clearly what you drink with a meal has a significant influence on the amount of iron absorbed. (*Hum Nutr Appl Nutr* 82;36(2):116-123)

The Different Types of Iron

Iron, by the way, is found in two forms, heme and non-heme iron. Heme iron makes up about 40 percent of the iron in meat, poultry, and fish, and is well absorbed (30-50 percent availability). Non-heme iron makes up 60 percent of the iron in animal tissue and all the iron in plants (vegetables, fruits, grains, nuts) and is less well absorbed (5 percent availability). This difference in absorption is one reason vegetarians are at higher risk of anemia. Even when they eat plenty of high-iron foods such as dark leafy greens, the iron isn't absorbed well.

Meat isn't necessarily a problem. It keeps us from becoming anemic. The key is to vary the diet with plenty of fruits and vegetables and occasional meatless meals. This is one of the problems I have with Atkins-type diets. Granted, they do promote weight loss and improve several blood markers related to heart disease. With such a strong emphasis on meat products, however, it makes one wonder about the potential problems of excess iron stores later down the road.

The Jury's Still Out, But the Verdict Is In

The overall effects of iron accumulation are still under investigation. I'd be the first to admit that we don't yet have the full story. But the writing is on the wall. Enough evidence is there to know that excess iron increases the risk of cardiovascular disease, heart attack, stroke, diabetes, cancer, neurodegenerative diseases like Alzheimer's and others, infections, and numerous other problems generally associated with aging. And we now know several ways to safely, effectively, and inexpensively lower excess iron levels. I can see no downside to doing so, and the research continues to support the idea that the sooner one starts the greater the benefits.

I would highly recommend taking the steps I mentioned above, starting with the guidance of your doctor and the proper blood test to establish a starting point:

- Use iron supplements only if you're anemic.
- Avoid taking high doses of vitamin C with meals or foods that are high in iron.
- Eat a varied diet with plenty of colorful vegetables and fruits.
- Don't eat meat with every meal.
- Avoid iron-fortified processed foods and cereals. For example, a bowl of Total cereal from General Mills contains 18 grams of iron per serving, 100 percent of the stated daily requirement. A better choice would be one like Rice Crunch-Ems from Health Valley which contains only 6 percent of the daily requirement. Read the labels for iron content.
- Consider adding one or more of the supplements mentioned earlier to your regimen, if you haven't already done so.
- Consider donating blood once or twice a year, if you're qualified to be a donor and your ferritin level doesn't drop too low. Every study that I've seen has shown that frequent blood donors (two units a year) use less blood pressure and cholesterol medication, have fewer weight problems, reduce their coronary risk, and live longer. If donating is not for you, at least monitor your ferritin level a couple of times a year and adjust that level to the range discussed earlier using one of the other ways I've outlined.

If the research money were there, I have no doubt you'd be reading about iron reduction therapy being the next great breakthrough in anti-aging and disease prevention. But the research money isn't there and I don't know when or even if it ever will be. So the general public will once again be left in the dark concerning this simple life-extending technique. *Alternatives* readers won't be. And, if you pass this information along, neither will your loved ones.

Take care,

Dr. David Williams

If you have questions or comments for Dr. Williams, please send them to the mail or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

Here's how you can reach us:

- For Customer Service matters such as address changes, call 800-527-3044 or write to custsvc@drdavidwilliams.com.
- If you are a licensed health professional and would like to learn how to begin reselling MHN supplements to your patients, please e-mail practitionerinquiries@davidwilliamsmail.com.
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